HARD RED SPRING WHEAT

QUALITY REPORT

Physical, Chemical, Milling, and Baking Characteristics

1969 CROP

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
CROPS RESEARCH DIVISION

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
CROPS RESEARCH DIVISION
in cooperation with
State Agricultural Experiment Stations

REPORT OF PHYSICAL, CHEMICAL, MILLING, AND BAKING EXPERIMENTS WITH HARD RED SPRING WHEAT

1969 CROP[1/]

by

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1/ This is a progress report of cooperative investigations containing some results that have not been sufficiently confirmed to justify general release; interpretations may be modified with additional experimentation. Confirmed results will be published through established channels. The report is primarily a tool for use of cooperators and their official staffs and to those persons having direct and special interest in the development of agricultural research programs.

This report was compiled in the Crops Research Division, Agricultural Research Service, U.S. Department of Agriculture. Special acknowledgment is made to the North Dakota State University for their facilities and services provided in support of these studies. The report is not intended for publication and should not be referred to in literature citations nor quoted in publicity or advertising. Use of the data may be granted for certain purposes upon written request to the agency or agencies involved.

Hard Red Spring and Durum Wheat Quality Laboratory
Fargo, North Dakota
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COOPERATING AGENCIES, STATIONS, AND PERSONNEL

The cooperating agencies and stations conducting the varietal plot and nursery experiments from which the 1969 spring wheat samples were received are listed below:

California Agricultural Experiment Station:

Delta, El Centro, and Sutter.

Colorado Agricultural Experiment Station:

Grand Junction.

Idaho Agricultural Experiment Station:

Sandpoint.

Minnesota Agricultural Experiment Station:

Crookston, Morris, and St. Paul.

Montana Agricultural Experiment Station:

Bozeman, Dutton, Havre, and Sidney.

North Dakota Agricultural Experiment Station:

Carrington, Dickinson, Fargo, Langdon, Minot, and Williston.

South Dakota Agricultural Experiment Station:

Highmore and Watertown.

Washington Agricultural Experiment Station:

Lind.

Wisconsin Agricultural Experiment Station:

Madison.

Wyoming Agricultural Experiment Station:

Sheridan.

A complete list of all cooperating agencies, stations, and personnel for the year will be found in the report by Dr. R. E. Heiner, "Results on Spring Wheat Varieties Grown in Cooperative Plot and Nursery Experiments in the Spring Wheat Region in 1969."

INTRODUCTION

Samples of standard varieties and many of the new strains of hard red spring wheat grown in cooperative experiments in the spring wheat region of the United States[2/] have been milled each year by the USDA. The flours were assayed chemically and physically and baked into bread to determine the quality characteristics. The purpose of this report is to make available to the cooperators, quality data on the standard varieties and new strains of hard red spring wheat from the 1969 crop.

The same general format and techniques were used in evaluating the wheats as outlined in quality reports for previous years. The data contained in this report are comparable to data in past reports and, where applicable, average results and also the average results of the 1968 crop are compared.

The format adopted in 1962 shows an evaluation of the samples in three categories: kernel characteristics, milling performance, and baking evaluation. For the sake of brevity, only the apparent deficiencies or outstanding characteristics for the varieties are given. The column, General Evaluation, on the tables indicating the Uniform Regional Nursery Averages and Sawfly Yield Nursery Averages, gives the overall performance of the variety for the samples submitted. It is hoped that with the use of this format one can quickly ascertain the various characteristics of the sample and any outstanding features or deficiencies which are apparent. Again, for physical characteristics, the mixogram data are given with no specific comments made regarding the patterns, since reference mixograms for each of the general types are presented at the end of the report.

Generally, the crop was grown under conditions favorable for later maturing varieties. The average extraction was lower than the 1968 crop and the flour mineral content higher at 65% extraction, as was the wheat mineral content. The baking performance was slightly poorer than the 1968 crop showing lower absorption, weaker doughs, and poorer grain. The poorer performance was a reflection, in part, of the lower protein content.

The oxidation requirements for the 1969 crop were slightly less than the 1968 crop, requiring approximately 5 p.p.m. bromate. Some samples did show the need for more oxidation.

2/ Heiner, R. E., "Results on Spring Wheat Varieties Grown in Cooperative Plot and Nursery Experiments in the Spring Wheat Region in 1969." Crops Research Division, Agricultural Research Service, USDA.

SOURCE OF THE SAMPLES

Tests were performed on 604 samples received from field plots, uniform regional nurseries, and sawfly yield nurseries of the 1969 crop. These samples originated in ten states: California, Colorado, Idaho, Minnesota, Montana, North Dakota, South Dakota, Washington, Wisconsin, and Wyoming. Twenty-three stations from these states were represented, namely, Delta, El Centro, and Sutter in California; Grand Junction in Colorado; Sandpoint in Idaho; Crookston, Morris, and St. Paul in Minnesota; Bozeman, Dutton, Havre, and Sidney in Montana; Carrington, Dickinson, Fargo, Langdon, Minot, and Williston in North Dakota; Highmore and Watertown in South Dakota; Lind in Washington; Madison in Wisconsin; and Sheridan in Wyoming.

Due to apparent differences in the characteristics of the wheats and protein contents, no samples were blended this year.

On page 5 are listed the spring wheats which were included in the 1969 Uniform Regional Nursery trials. The variety or cross, the station which developed the variety, the state selection number, and the C.I. number are given. The Canadian selection RL 4200 was named Neepawa and licensed and released by the Canada Department of Agriculture for seed increase in 1969 in Canada.

In Table 29 are given the average data for the Uniform Regional Nursery samples. The data for kernel characteristics and milling performance are arithmetical averages of the individual samples. However, the mixograms and baking data were obtained from blends of equal proportions of the individual flours for each sample from the 17 stations. The Sandpoint, Idaho samples were not included because of late arrival.

In Table 34 are given the average data for the Sawfly Yield Nursery samples obtained from the arithmetical averages of the individual samples.

ENTRIES FOR THE 1969 UNIFORM REGIONAL HARD RED SPRING WHEAT NURSERY

Entry No.	Cross or Variety	C.I. or Sel. No.	Year Entered	Source
1	Marquis	3461	1929	Canada
2	Thatcher	10003	1929	USDA-Minn.
3	Selkirk	13100	1953	Canada
4	Justin	13462	1959	N. Dak.
5	Chris	13751	1960	USDA-Minn.
6	Polk	13773	1963	"
7	Waldron	13958	1964	N. Dak.
8	Neepawa*	RL4200	1967	Canada
9	Pb*2/Magnif Entererriana	RL4220	1968	"
10	Fta/61-107	S6579	1968	USDA-N.Dak.
11	Fta/62-85	S6694	1969	"
12	Polk/ND363	ND492	1969	N. Dak.
13	ND259/Cly/2/Cly/ND122	ND493**	1969	"
14	ND259/Cly/2/Cly/ND122/3/Jtn/ND142	ND494**	1969	"
15	Jtn*2/3/ND259/Cly/2/Cly/ND122	ND495**	1969	"
16	Pj60/3/Hry*7/P54//K184/7*Wis250/4/K184/4*Wis250	Wis271**	1967	USDA-Wis.
17	do	678-1-6-9**	1969	"
18	II-55-10/4/Pb/II-52-329/3/II-53-38/III-58-4//II-53-546	II-62-2**	1968	USDA-Minn.
19	do	II-62-61**	1968	"
20	Nrn10/Bvr14//6*Cnt	MT677**	1969	USDA-Mont.
21	do	MT6723**	1969	"
22	Red River 68	14193**	1968	World Seeds, Inc.

* Formerly Selection No. RL 4200. Licensed and released in 1969. RL4125 is Tc*7/Ftn//Tc*6/KF; RL4008 is Tc*2//Ftn/Tc.

** Semidwarf selections.

METHODS

The terminology and methods used are briefly described below:

Test Weight Per Bushel - The weight per Winchester bushel of cleaned, dry, scoured wheat. To determine the dockage-free test weight on a comparable sample, approximately one pound per bushel should be subtracted from the value given.

1000 Kernel Weight - The 1000 kernel weight was determined by counting the number of kernels in a 10 gram sample of cleaned, picked wheat with an ASCO Seed Counter[4/].

Kernel Size - The percentages of the size of the kernels (large, medium, and small) were determined on a wheat sizer as described by Shuey[5/].

The sieves of the sizer were clothed as follows:

Top Sieve	-	Tyler # 7 with 2.92 mm. opening
Middle Sieve	-	Tyler # 9 with 2.24 mm. opening
Bottom Sieve	-	Tyler #12 with 1.65 mm. opening

Potential Yield - The potential yield was determined by multiplying the percentages of the overs of each sieve #7, #9, and #12, by the value of 78%, 73%, and 68%, respectively. The accumulation percentage is given as the potential yield.

Milling - The samples were cleaned by passing the wheat over an Emerson Kicker and Dockage Tester and through a modified Forster Scourer Model 6. The clean dry samples were pre-tempered to 12% moisture for at least 72 hours; then tempered to 16% moisture and allowed to stand overnight prior to milling.

All samples except the advanced yield nursery and field plot samples were milled on a Brabender Quadrumat Junior Mill. The mill was equipped with a #18 wire on the drum sieve. The throughs of the #18 wire were rebolted on a Strand Sifter equipped with a #60 Tyler sieve. The sample was sifted for 1 minute. The throughs of the #60 wire were classified as flour and this was the material tested. The overs of the #18 wire were classified as bran and the throughs of the #18 wire and overs of the #60 Tyler sieve as crude shorts.

The field plot and advanced yield nursery samples were milled on a Buhler Continuous Experimental Mill. This mill has been slightly modified

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4/ Mention of a trademark name or a proprietary product does not constitute a guarantee or warranty of the product by the USDA, and does not imply its approval to the exclusion of other products that may also be suitable.

5/ Shuey, William C. A Wheat Sizing Technique for Predicting Flour Milling Yield. Cereal Science Today 5: 71-72,75 (1960).

to give results more comparable to commercial milling. The break scalping sieves were clothed with #54 stainless steel wire, the reduction scalping sieves with #58, #66, and #105 stainless steel wires for the first, second, and third reduction, respectively. All of the flour sieves were clothed with #135 stainless steel wire.

All six flour streams were combined to give the patent flour. The extraction of a good milling wheat using this flow is approximately 68%. This is comparable to a commercial "long patent" extraction flour. At this flour extraction of the wheat, the changes in flour ash are most sensitive to changes in percent extraction.

Protein Content - The protein was calculated by multiplying the factor of 5.7 times the percent nitrogen as determined by the standard Kjeldahl procedure.

Mineral Content or Ash Content - This was determined by measuring the residue of the minerals left after incinerating the sample for approximately 16 hours at 565° C. The results were reported as percentage of the sample which was incinerated.

Mixogram - The mixogram was determined by using 30 g. of flour and adding 20 cc. of water. The sensitivity spring setting was set at 10. All mixograms were run with constant weight of flour and volume of water. Absorptions reported were adjusted according to the height of the mixogram. The correction factor was determined from a series of flours by varying the amount of absorption.

Mixogram Pattern - The reference mixogram patterns given at the end of the report demonstrate the different types of mixograms which were obtained. A single number is assigned each pattern to characterize and simplify the classification of the curves - the larger number indicating stronger curve characteristics.

Baking Procedure or Formula - The baking formula used was as follows:

100% flour	3% milk D.S.M.
2% salt	3% yeast
5% sugar	2% shortening (Crisco, melted)

The sample was mixed to development in a National Manufacturing mixer, for the 25 g. sample the Micro mixer, for the 100 g. sample the 100 g. special mixer size. Also, 10 p.p.m. of bromate and 0.1% Barley Malt Flour was used for oxidation and enzymatic supplements, respectively.

Absorption - This was the water, expressed as percent of the flour, required to bring the dough to proper consistency.

Crumb Color - This value was determined by comparing the loaf of the tested sample against a baking standard. This standard was selected as an average for the crop year for the spring wheat area.

Loaf Volume - This was volume of the baked loaf as determined by seed displacement.

All values (Protein, Ash, and Absorption) were reported on a 14% moisture basis.

DISCUSSION

The following discussion presents some of the basis for the techniques and criteria used in evaluating the samples. There are four major evaluation categories used: Kernel characteristics, to characterize the kernel; milling performance, to evaluate the general milling characteristics; mixogram patterns, to classify the flour as to type; and baking evaluation, to rate the flour as to overall baking.

Each evaluation category can be important. A sample could be of a sufficiently poor quality for a given category to eliminate it from possible future testing. However, a sample submitted for the first time and found to be questionable should be tested again to establish if it has a satisfactory or unsatisfactory classification. A sample which is consistently rated as questionable should be discarded.

All samples, as in previous years, are compared to a milling and baking standard which represents a blend of the crop year blended to a known quality. However, the samples for the individual stations were evaluated against the average results of the varieties Chris, Justin, and Selkirk from the respective stations. The agronomic and climatic conditions of the individual locations can effect the quality of the wheat sample, such that, the evaluation at certain locations could have all samples -- even the named varieties -- classified as questionable to unsatisfactory. Therefore, the evaluation ratings of one station are not directly comparable to those of another station. For example, an area may produce low protein wheats which give large and plump kernels, good milling and kernel characteristics, but low protein, and unsatisfactory baking properties such as short mixing time, low loaf volume, and weak dough characteristics. The wheat from this area could not be considered as a strong spring wheat, and would not maintain the quality expected from the spring wheat producing area. A good variety should have tolerance to a wide range of environmental conditions and the overall picture taken into consideration for establishing these varieties.

A sample rated as satisfactory to questionable has only a very minor fault; however, if it is questionable to satisfactory, the fault is more serious, but in either case the fault is not sufficient to be considered as detrimental. For questionable to unsatisfactory, and unsatisfactory to questionable, the faults are much more serious and the sample would have little future promise of being accepted if such faults are consistent.

When more than one of the factors are below the standard, the variety is marked as questionable or unsatisfactory. If sufficient data accumulated over a two- or three-year period show a definite deficiency, the variety should be discarded. If a major fault is found, the variety is undesirable and should be discarded.

Kernel Characteristics are important in determining the initial value of the wheat and, if extremely poor, could disqualify a new variety from further consideration. Because of the present grading system, it is

desirable to have a good test weight. If a sample has a low 1000 kernel weight and small kernel size distribution, it would be considered a poor sample for milling because of the high ratio of bran to endosperm. Therefore, it is desirous to have plump kernels. Wheat ash is an important factor when comparing a variety against other standard varieties. If a sample would have consistently higher wheat mineral content, it would enhance the probability of having high flour ash. Low protein would not be desirous when comparing with standard varieties, because in a low protein crop year the probability of it having such a low protein as to be undesirable is very probable. Therefore, the protein must also be considered as a characteristic when comparing other varieties grown in the same locality.

Milling Performance is very important, especially the sub-category of milling characteristics. If low extractions or high flour ash are obtained, this becomes a major factor and is quite unacceptable from a commercial milling standpoint. All flour mineral contents are reported at a constant extraction of 65% so that the figures are directly comparable. As a rule of thumb, one can approximate that each point of ash (0.01%) is equivalent to approximately 2% in extraction.

Milling characteristics are important. A sample which tends to be soft in character requires a different milling technique to be milled properly. On commercial mills flowed for hard vitreous spring wheats, soft milling characteristics cause great difficulty. Therefore, if a sample shows softness in character, it is considered to be unsatisfactory. Likewise, a sample which is extremely hard and vitreous will cause difficulty. Both types of wheat (soft or vitreous) require different roll pressures, clothing, sifter surface, and temper to be milled properly. If these wheats are blended with normal milling wheats, improper results are obtained since these characteristics are not necessarily compatible or additive. Normal to soft score indicates that the sample shows a tendency toward softness of character on the flour mill stocks and extraction. This would indicate that the sample may give some difficulty for certain mill streams and an adjustment would either have to be made in the milling flow, or in tempering procedures to compensate for these differences. The properties of this wheat may or may not be compatible with other wheats with which it may be blended, therefore, it is important to maintain varieties with as uniform milling characteristics as possible.

The amount of protein recovered in the flour for a sample is of importance. The high protein wheats yielding low protein flours are not desirable. Such a wheat would have much of the protein distributed in the outer portion of the kernel which would result in excessive protein in the feed. Therefore, higher protein in the wheat would be necessary to yield a flour of comparable protein to a wheat which gives good flour protein recovery.

Mixogram Patterns and Farinogram Patterns are important in estimating the strength and mixing tolerance or potential mixing tolerance of a flour. A long flat curve is more desirable than a short peaked curve; however, an extremely

long curve may be undesirable, since the flour would require excessive mixing to develop. The pattern of the curve is of importance as well as the length, and both must be considered.

Baking Evaluation takes into account the flour absorption, mixing time, dough characteristics, loaf volume, and machinability. A sample which has low absorption would be unsatisfactory, compared to other spring wheats with normal absorption. A sample with extremely short mixing time would also be considered undesirable as a good strong spring wheat. When a sample is in the minimal range for these values, it is considered as questionable until further testing demonstrates whether a definite deficiency exists.

Doughs having mellow to weak dough properties show a tendency towards weakness. Also, for mellow to strong, the dough is mellow, but has a tendency to be strong, and a strong to mellow dough is just the reverse. Since these characteristics are subjective rather than objective, it is necessary at times to estimate the tendency; therefore, the necessity exists for apparent double grades.

The grain or appearance of the interior of the loaf shows how well the sample stood up during baking and may point out or explain some deficiencies which have been observed during the baking test.

Loaf volume indicates potential strength of the flour in a different manner than mixing time or dough characteristics, in that it shows the ability or lack thereof for the dough to expand under pressure and to contain the entrapped gases during this expansion. Weak flours act much like rotten balloons which burst when blown up and collapse, thus yielding low loaf volume or extremely large volume and large holes in the interior of the loaf. Low protein flours and lifeless (dead) doughs exhibit the properties similar to putty and do not expand during fermentation or baking and give low loaf volume. Tough and very bucky doughs are bound too tight and impede expansion of the gases causing low loaf volume.

General Evaluation rating is given for varieties which have been tested at least for two crop years. This evaluation takes into account the various grading factors and the results of the crop years as an overall rating. The main defects and outstanding features are discussed. A variety which shows some promise with outstanding agronomic characteristics should be seriously considered and looked at in large plots, if it has not been previously, providing other sufficient information has been obtained. A sample which shows little promise should be discontinued.

FIELD PLOT NURSERY SAMPLES - 1969 CROP

One hundred and thirty-five field plot nursery samples were received from four states and seven stations. The data for the individual samples are given in Tables 1 through 9. In Table 10, are given the averages for the varieties by states for the following varieties: Chris, Justin, and Selkirk for North Dakota; Chris and Crim for Colorado. The averages for California are not given due to the fact that all of these varieties were semidwarfs, with the exception of Ramona 50. The Wisconsin data was not included since only one station, as well as one check variety (Selkirk), was received. The averages for these commercial varieties per location were used as standards for judging the other samples in the field plots. The 1968 and 1969 averages also are given for these varieties from the states of North Dakota and Colorado for comparative purposes.

CALIFORNIA SAMPLES

Twenty-five samples were received from the Delta, El Centro, and Sutter, California stations. All of these samples were named varieties with the exception of the selections NK 1501, NK 1502, NK 1651, and NK 1877. The named varieties were: Azteca 67, Ciano 67, Inia 66, Lerma Rojo 64, Mayo 64, Nainari 60, Ramona 50, Red River 68, Siete Cerros 66, Sonora 64, and Tobari 66. The results for each variety are given in Tables 1 through 3. The Sutter station samples were too low in protein for bread production, but were still tested.

COLORADO SAMPLES

Twenty-four samples were received from the Grand Junction, Colorado station. A series of eight wheat samples were grown at three fertilizer levels of nitrogen -- 0, 80#/A, and 160#/A. Five of the wheat samples were the named varieties: Chris, Crim, and Waldron (normal height varieties), and Nadadores 63 and Pitic 62 (semidwarf varieties), and three were the selections: Ciano Sib S-4017, NK X160, and WS 1502, which are semidwarfs. The results for each variety and selection are given in Table 4. The variety, Chris, was used as a check in judging the performance of the other samples submitted. Although the semidwarfs did respond to the application of nitrogen, these types did not attain the same protein content of the normal height varieties.

Ciano Sib S-4017

Kernel Characteristics - Questionable. Low protein.

Ciano Sib S-4017 (Cont'd.)

Milling Performance - Satisfactory. Shows a tendency to have a wider spread in protein between the flour and wheat at higher levels of protein content.

Baking Evaluation - Satisfactory to Questionable. A tendency to weaker doughs, lower loaf volume, and bake absorption.

General Evaluation - Based on two crop years' results, this selection would show little promise because of the low protein and minimum absorption.

NK X160

Kernel Characteristics - Questionable. Low protein.

Milling Performance - Satisfactory to Questionable. Excessive spread between the wheat protein and flour protein.

Baking Evaluation - Questionable to Unsatisfactory. Low absorption.

General Evaluation - Based on this crop year's results, this selection would show little promise due to the low protein, larger than desired protein spread between flour and wheat, and low bake absorption.

WS 1502

Kernel Characteristics - Satisfactory to Questionable. Tendency for low protein.

Milling Performance - Satisfactory to Questionable. Protein spread between flour and wheat greater than desired.

Baking Evaluation - Satisfactory to Questionable. Erratic response in absorption as related to the check, and tendency towards too strong a dough.

General Evaluation - Based on this year's crop, this selection would show some promise, although it does have a tendency to be stronger than desired and gives somewhat erratic results.

NORTH DAKOTA SAMPLES

Seventy-eight samples were received from the Carrington, Dickinson, and Williston, North Dakota stations. Forty-nine of these samples were the named varieties: Canthatch, Chinook, Chris, Ciano 67, Crim, Fortuna, Inia 66, Justin, Manitou, Neepawa, Polk, Red River 68, Selkirk, Thatcher, and Waldron. Twenty-nine of the samples were the selections: II-62-2, II-62-61, ND 483, ND 484, ND 485, ND 486, ND 487, ND 491, S 6579, S 6694, WS 1809, WS 1812, and Wisc. 271. The samples from Carringron were grown on both dryland and irrigated land. The results for each variety and selection are given in Tables 5 through 8. The average results of the 1969 data are given in Table 10. (Note: All previous data would indicate that the dryland samples of II-62-2 and II-62-61 were switched).

II-62-2

Kernel Characteristics - Satisfactory to Questionable. Tendency towards low protein.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory to Questionable. Tendency towards minimum absorption.

General Evaluation - Based on this crop year's results, this selection would show some promise as a new variety. Although it does have minimum protein and a tendency towards minimum absorption.

II-62-61

Kernel Characteristics - Questionable. Low protein.

Milling Performance - Satisfactory.

Baking Evaluation - Questionable to Unsatisfactory. Low absorption.

General Evaluation - Based on this year's crop results, this selection would show no promise as a new variety, due to low protein and low absorption.

ND 483

Kernel Characteristics - Satisfactory.

Milling Performance - Questionable to Satisfactory. Maximum ash.

Baking Evaluation - Satisfactory.

General Evaluation - This selection would show some promise based on this crop year's results.

ND 484

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory to Questionable. Minimum absorption.

General Evaluation - This selection would show some promise as a new variety, although it does have minimum absorption and a tendency to give poor loaf interior.

ND 485

Kernel Characteristics - Questionable. Minimum protein and poor kernel size distribution.

Milling Performance - Satisfactory.

Baking Evaluation - Questionable. Low loaf volume.

General Evaluation - Based on this crop year's results, this selection would show little promise as a new variety.

ND 486

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Based on this crop year's results, this selection would show some promise.

ND 487

Kernel Characteristics - Satisfactory to Questionable. Minimum protein.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory to Questionable. Tendency towards minimum mixing.

General Evaluation - The crop year's results indicate that this selection would show some promise but it does tend to give better results on irrigated land.

ND 491

Kernel Characteristics - Satisfactory to Questionable. Minimum protein.

Milling Performance - Questionable. Definite tendency towards softness.

Baking Evaluation - Satisfactory.

General Evaluation - This selection would show little promise due to the milling performance and minimum protein.

S 6579

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Based on two crop years, this selection would show some promise as a new variety, although it does have a tendency to give erratic results. Last year the results indicated low absorption and long mixing as faults.

S 6694

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory to Questionable. A tendency towards maximum ash.

Baking Evaluation - Satisfactory.

General Evaluation - Based on this crop year, this selection would show some promise, although it does have a tendency to give maximum ash.

WS 1809

Kernel Characteristics - Satisfactory to Questionable. Tendency towards low protein.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Based on this crop year's results, this selection would show some promise, although it does have a tendency to give somewhat erratic results and possible minimumprotein and absorption.

WS 1812

Kernel Characteristics - Satisfactory to Questionable. Tendency towards low protein.

Milling Performance - Satisfactory to Questionable. A definite tendency to show soft milling characteristics.

Baking Evaluation - Questionable. Tendency to give erratic results, showing low absorption, short mixing time, and mellower doughs.

General Evaluation - Based on this year's data, this selection would show little promise because of the erratic results, minimum protein, short mixing, and mellower dough.

Wisc. 271

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory to Questionable. A tendency to show low absorption.

General Evaluation - Based on two crop years, this selection would show little promise due to the erratic results, showing a tendency for low protein, long mixing, and low absorption.

WISCONSIN SAMPLES

Eight samples were received from the Madison, Wisconsin station. Four of the samples were the named varieties: Lathrop, Polk, Selkirk, and Waldron, and four were the semidwarf selections W 261, W 270, W 271, and 678-1-6-9. The results of these samples are given in Table 9.

W 261

Kernel Characteristics - Satisfactory.

Milling Performance - Very Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Based on this year's results, the selection would show good promise; however, in line with the 1967 crop, the selection would show little promise, due to low protein and low bake absorption. Therefore, based on two crop years, this selection would show some promise.

W 270

Kernel Characteristics - Satisfactory.

Milling Performance - Very Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Based on two crop year's results, 1967 and 1969, this selection would show some promise; however, it does show a tendency to give low protein content and low bake absorption.

W 271

Kernel Characteristics - Satisfactory.

Milling Performance - Very Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Based on two crop years, this selection would show some promise as a new variety. But, again, the 1967 crop was low in protein compared to the standard Chris variety and did have low absorption.

678-1-6-9

Kernel Characteristics - Satisfactory to Questionable. Low protein content.

Milling Performance - Very Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - This selection would show some promise as a new variety when compared with other comparably grown samples from Wisconsin. However, it does show a tendency to have minimum protein content and absorption.

UNIFORM REGIONAL NURSERY SAMPLES - 1969 CROP

A total of 395 Uniform Regional Nursery samples were received. The samples represented 18 stations from eight states. No blends were made of the samples for this crop year due to the lack of compatibility and were milled as individual samples to eliminate any possible erroneous results. Thus, a total of 395 samples were milled and baked. Twenty-two samples were received from each of the stations, except the Sandpoint, Idaho series which consisted of only 21 samples. Thirteen selections were included for quality evaluation in the Uniform Regional Nursery samples. The remainder of the samples were the commercially named varieties of: Chris, Justin, Marquis, Neepawa, Polk, Red River 68, Selkirk, Thatcher, and Waldron.

Twenty-one samples were received from the Sandpoint, Idaho station. Eight named varieties: Chris, Justin, Marquis, Neepawa, Polk, Red River 68, Thatcher, and Waldron were included in the series and only Selkirk was omitted. Data for the samples submitted are given in Table 11. The Idaho data was not included in the averages because of late arrival at the laboratory.

Sixty-six samples were received from the three Minnesota stations: Crookston, Morris, and St. Paul. Data for these samples are given in Tables 12 through 14. The samples from St. Paul were bleached and the samples from Crookston and St. Paul contained yellow bellies. This weathering effected the milling to such a degree that the majority of the samples showed soft milling characteristics.

Sixty-six samples were received from three stations in Montana: Bozeman, Havre, and Sidney. Data for these samples are given in Tables 15 through 17.

One hundred and thirty-two samples were received from six stations in North Dakota: Carrington, Dickinson, Fargo, Langdon, Minot, and Williston. The data for these samples are given in Tables 18 through 23. The samples from Langdon had yellow bellies, thus causing the majority of the samples to show soft milling characteristics. The samples from Carrington were grown on irrigated land.

Forty-four samples were received from two stations in South Dakota: Highmore and Watertown. The data for these samples are given in Tables 24 and 25. The Watertown samples showed some heat damage which may account, in part, for the poorer milling results.

Twenty-two samples were received from Lind, Washington. The data for these samples are given in Table 26.

Twenty-two samples were received from Madison, Wisconsin. The data for these samples are given in Table 27. These samples were bleached which accounts for the softer milling characteristics.

Twenty-two samples were received from Sheridan, Wyoming. The data for these samples are given in Table 28.

In Table 29 are given the average results for each of the twenty-two samples submitted from seven states and 17 stations. The results for Sandpoint, Idaho were not included in this table of averages because of late arrival of the samples. The results for kernel characteristics and milling performance were obtained by averaging the results from the 17 tables--12 through 28. The baking results were obtained from a blend of the flours in equal proportions from each of the stations for the respective variety or selection. The regular 100 gram straight dough rich formula baking procedure was used in baking the flour blends. The general evaluation column includes the general overall performance of each of the samples, as well as results obtained from tolerance bake on the flour blends. This affords a ready reference of all of the samples tested.

For simplicity and brevity of the report, as in previous reports, each variety will be discussed from the general overall average of the results given in Table 29, rather than the individual stations. The general evaluation summarizes the results from the individual stations or from two or more crop years, when applicable, as well as the tolerance test. The evaluation is more meaningful for the overall performance of a variety when at least two or more crop years are included.

In Table 30, the averages are given by states for the two varieties of Chris and Justin. This table gives a comparison of the varieties by state, as well as state averages of the two varieties for comparative purposes, and the 1969 grand averages. The 1968 grand averages for the same two varieties are also given for comparison of the two crop years. In general, the 1969 crop had slightly better kernel characteristics (test weight, 1000 kernel weight, kernel size distribution) than last year with approximately 1/2% lower protein content. The milling was somewhat poorer than last year showing a percent and one-half less in flour extraction, but 2 points less in mineral content. The absorption was 1-1/2% less than last year, which may be, in part, a reflection of the protein content. The mixing time was less than last year, shown by a weaker mixogram pattern and was also reflected by weaker dough characteristics. The crumb color was slightly better but the crumb grain was poorer than last year, and the loaf volume greater than the 1968 crop.

The average results of the varieties, Chris, Justin, and Selkirk, for each of the individual stations, were used as a standard for the other selections from that station; therefore, a variety or selection may be rated satisfactory at two different stations, but comparison of the data may show much poorer results for one station due to adverse environmental conditions. Thus, in actuality, the sample with poor results could be rated as unsatisfactory quality wise when compared to the overall spring wheat area. The state averages in Table 30, are additional guides for the relative performance for the crop year by states.

The average results for the new varieties or selections were:

RL 4220

Kernel Characteristics - Questionable to Satisfactory. Low protein.

Milling Performance - Satisfactory. Does show tendency to soft milling characteristics.

Baking Evaluation - Satisfactory to Questionable. Tendency for minimum absorption.

General Evaluation - Based on two crop years' data, this selection would show little promise as a new variety. The milling characteristics definitely show a tendency towards softness; the protein content is minimal, and there is a tendency towards low bake absorption.

II-62-2

Kernel Characteristics - Satisfactory to Questionable. Minimum protein content.

Milling Performance - Satisfactory. Tendency to show soft characteristics.

Baking Evaluation - Satisfactory to Questionable. Minimum absorption and somewhat lower loaf volume.

General Evaluation - Based on two crop years, this selection would show some promise as a new variety, although it does have a tendency towards minimum protein (approximately 1% less on the average) than the standard check varieties and lower absorption (approximately 1% lower).

II-62-61

Kernel Characteristics - Questionable to Unsatisfactory. Low protein.

Milling Performance - Satisfactory.

Baking Evaluation - Questionable. This selection definitely shows low absorption and a tendency towards lower loaf volume.

General Evaluation - Based on two crop years, this selection would show no promise as a new variety, primarily due to the low protein (at least 2-1/2% below the check varieties), and low absorption (approximately 3% below the check varieties).

MT 677

Kernel Characteristics - Questionable. Low test weight, 1000 kernel weight and protein content and small kernel size distribution.

Milling Performance - Questionable to Unsatisfactory. Low extraction, maximum ash, and tendency towards soft milling characteristics.

Baking Evaluation - Questionable. Low absorption.

General Evaluation - This selection would show no promise as a new variety because of deficiencies in all of the categories.

MT 6723

Kernel Characteristics - Questionable. Minimum test weight, 1000 kernel weight, and protein content and small kernel size distribution.

Milling Performance - Questionable to Unsatisfactory. Low extraction, maximum ash, and a definite tendency towards soft milling characteristics.

Baking Evaluation - Satisfactory to Questionable. Minimum bake absorption.

General Evaluation - This selection would show no promise as a new variety because of definite deficiencies in kernel characteristics, milling performance, and a minimum bake absorption.

ND 492

Kernel Characteristics - Satisfactory.

Milling Performance - Unsatisfactory to Questionable. Very low extraction.

Baking Evaluation - Satisfactory.

General Evaluation - This selection would show little promise as a new variety, primarily due to the milling performance. However, additional tests should be made to verify these results.

ND 493

Kernel Characteristics - Satisfactory to Questionable. Tendency towards low protein.

Milling Performance - Very Satisfactory. Good extraction, very low ash.

Baking Evaluation - Questionable to Satisfactory. Minimum loaf volume and tendency towards long mix.

ND 493 (Cont'd.)

General Evaluation - This selection would show little promise as a new variety based on this year's results, due primarily to the kernel characteristics and the low loaf volume.

ND 494

Kernel Characteristics - Satisfactory to Questionable. Minimum protein.

Milling Performance - Questionable. Low extraction. Definite tendency to soft milling characteristics.

Baking Evaluation - Satisfactory.

General Evaluation - Based on this crop year's results, this selection would show little promise as a new variety due to the tendency towards minimum protein content and the milling performance.

ND 495

Kernel Characteristics - Satisfactory.

Milling Performance - Questionable. Low extraction. Definite tendency towards soft milling characteristics.

Baking Evaluation - Satisfactory.

General Evaluation - This selection would show some promise as a new variety based on this year's results.

S 6579

Kernel Characteristics - Satisfactory to Questionable. Tendency towards minimum protein content.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - This selection would show some promise as a new variety based on this year's results. Last year it was rated as showing little promise due to the erratic results which were obtained at the various locations. However, a combination of the two years' data shows this selection would have some promise as a new variety.

S 6694

Kernel Characteristics - Questionable to Satisfactory. Minimum protein.

Milling Performance - Questionable. High ash.

Baking Evaluation - Satisfactory.

General Evaluation - Based on this year's results, this selection would show little promise as a new variety due to the poor milling performance and kernel characteristics.

Wisc. 271

Kernel Characteristics - Questionable to Satisfactory. Minimum protein.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory. Does have long mixing and a tendency toward strong doughs.

General Evaluation - Based on three crop years, this selection would show little promise as a new variety, primarily because of a tendency towards long mixing, strong doughs, and minimum protein content.

Wisc. 678-1-6-9

Kernel Characteristics - Satisfactory to Questionable. Minimum protein content.

Milling Performance - Satisfactory to Questionable. Minimum extraction and tendency towards soft milling characteristics.

Baking Evaluation - Satisfactory.

General Evaluation - This selection would show little promise as a new variety due to minimum protein content, minimum extraction, long mixing and a tendency for too strong a dough, based on this crop year's results.

SAWFLY YIELD NURSERY SAMPLES - 1969 CROP

Fifty samples were received from two stations in Montana and one station in North Dakota. Seventeen samples were received from each of the stations, Dutton and Sidney, Montana, and 16 samples from Williston, North Dakota. Four of these samples were the named varieties: Chinook, Fortuna, Rescue, and Thatcher. Thirteen of the samples were the selections: CN 164134, CN 530411, CN 754051, MT 6812, MT 6819, MT 6823, MT 6825, ND 6579, ND 6662, ND 6677, ND 6694, ND 66124, and ND 6745. The data for these samples from the individual stations are given in Tables 31 through 33. In Table 34, are the averages for these data. This year, for each station, the varieties of Chinook, Fortuna, Rescue, and Thatcher were averaged for standard performance and results of the individual samples were compared to this average.

Also, another series of 24 sawfly samples was received from the Williston station. Three of these samples were the named varieties: Chris, Fortuna, and Waldron. Twenty-one of the samples were the selections: S 6701, S 6722, S 6723, S 6724, S 6730, S 6733, S 6736, S 6737, S 6738, S 6739, S 6741, S 6753, S 6754, S 6758, S 6763, S 6764, S 6765, S 6766, S 6769, S 6774, and S 6775. The data for these samples are given in Table 35.

CN 164134

Kernel Characteristics - Satisfactory to Questionable. Minimum 1000 kernel weight and protein content, and small kernel size distribution.

Milling Performance - Satisfactory.

Baking Evaluation - Questionable to Satisfactory. Minimum absorption and loaf volume.

General Evaluation - Based on two crop years, this selection would show some promise as a new variety. However, it does have some kernel characteristic deficiencies and gives somewhat erratic baking results.

CN 530411

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Questionable to Satisfactory. Minimum baking absorption and dough character.

General Evaluation - Based on two crop years, this selection would show some promise as a new variety, but does have the tendency to give minimum absorption.

CN 754051

Kernel Characteristics - Satisfactory.

Milling Performance - Questionable to Satisfactory. Low extraction and a tendency to show soft milling characteristics.

Baking Evaluation - Satisfactory.

General Evaluation - Based on this crop year's results, this selection would show some promise as a new variety.

MT 6812

Kernel Characteristics - Questionable to Satisfactory. Minimum 1000 kernel weight and protein content, and small kernel size distribution.

Milling Performance - Questionable to Satisfactory. Maximum mineral content.

Baking Evaluation - Questionable. Low bake absorption and a tendency towards weak dough and low loaf volume.

General Evaluation - This selection would show little promise as a new variety, as it shows some deficiencies in all categories.

MT 6819

Kernel Characteristics - Satisfactory to Questionable. Minimum protein content.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory to Questionable. Tendency towards low loaf volume and maximum mixing requirements.

General Evaluation - This selection, based on this year's results, would show some promise as a new variety. However, if the deficiencies were consistent in additional tests in other crop years, it would be of little promise as a new variety.

MT 6823

Kernel Characteristics - Satisfactory to Questionable. Minimum protein content.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory to Questionable. Tendency for long mixing.

MT 6823 (Cont'd.)

General Evaluation - This selection would show some promise as a new variety, but does have a tendency to have minimum protein content and maximum mixing time.

MT 6825

Kernel Characteristics - Questionable to Satisfactory. Minimum test weight, 1000 kernel weight and protein content, and small kernel size distribution.

Milling Performance - Questionable. Minimum extraction and maximum ash.

Baking Evaluation - Questionable. Minimum absorption and low loaf volume.

General Evaluation - This selection would show no promise as a new variety, as it shows considerable deficiencies in all categories.

ND 6579

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory to Questionable. Tendency for soft milling characteristics and minimum extraction.

Baking Evaluation - Satisfactory to Questionable. Has a tendency for long mixing.

General Evaluation - Based on three crop years, this selection shows some promise as a new variety but definitely has a tendency towards long or excessive mixing.

ND 6662

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory to Questionable. Minimum dough character.

General Evaluation - Based on this crop year, this selection would show some promise as a new variety.

ND 6677

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Based on this crop year's results, this selection would show good promise as a new variety.

ND 6694

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory to Questionable. Tendency to have minimum extraction and maximum ash.

Baking Evaluation - Satisfactory.

General Evaluation - This selection would show some promise as a new variety based on this crop year's results.

ND 66124

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Based on two crop years, this selection would show some promise as a new variety but does have a tendency to have a long mixing requirement.

ND 6745

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Based on this crop year's results, this selection would show good promise as a new variety.

A general evaluation column in Table 35 describes the overall performance for the selections of the special series from Williston, North Dakota, as to their potential as new varieties. No discussion is included for this series since they represent one station and one crop year's data.

TABLE 1

QUALITY DATA ON FIELD PLOT NURSERY SAMPLES

Delta, California

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.	
Azteca 67		64.0	37.2	49	50	1	75.4	1.31	14.1	S-Q	69.0	.33	13.1	N	VS	65.7	8	65.7	7-1/2	VS	102	93	960	Q
Ciano 67		64.1	41.3	66	34	0	76.3	1.32	14.5	S	68.9	.32	13.7	N	VS	66.3	6	66.3	5-1/4	S	103	94 Sll	970	S
Inia 66		62.8	41.2	61	38	1	76.0	1.21	12.8	U	66.8	.30	12.0	N-S	VS	63.8	7	63.8	5-1/4	S	102	85 IO	920	S-Q
NK 1502		64.2	40.7	68	30	2	76.3	1.25	13.7	S-Q	69.4	.29	12.9	S-N	VS	63.5	8	63.5	6-1/2	S	100	94	910	Q
NK 1651		63.0	31.1	33	63	4	74.5	1.31	12.9	U	67.0	.33	12.0	N-S	VS	62.8	10	62.8	7-1/2	S-M	103	89	865	Q-U
NK 1877		64.4	35.1	48	50	2	75.3	1.27	13.6	Q-S	68.5	.31	12.7	N	VS	64.2	7	64.2	6-1/4	S	105	87 O	910	Q-S

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.

TABLE 2

QUALITY DATA ON FIELD PLOT NURSERY SAMPLES

El Centro, California

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.	
Azteca 67		64.9	36.5	52	46	2	75.5	1.57	14.8	S	68.4	.40	13.6	N	S	64.2	6	64.2	4	S	100	92 SlI	1010	S
Inia 66		65.2	40.7	67	32	1	76.3	1.37	13.3	Q	65.9	.39	12.0	N-S	S	63.8	5	63.8	3-1/2	S-M	99	90 OI	895	Q-S
Lerma Rojo 64		63.6	36.2	37	60	3	74.7	1.50	14.0	Q-S	65.3	.39	12.1	S	Q	63.2	2	62.2	1-1/2	W-M	102 SlC	97	930	U
Mayo 64		59.2	35.1	48	46	6	75.1	1.62	13.9	Q-S	62.5	.45	12.5	N	Q-U	63.2	5	63.2	4-1/2	S-M	101 SlC	93 SlI	915	S-Q
Ramona 50		62.5	46.7	81	17	2	77.0	1.64	14.3	S-Q	66.3	.40	12.8	S-N	S-Q	62.5	2	62.5	1-3/4	M	100	91 O	895	U
Red River 68		63.6	32.8	29	67	4	74.3	1.62	14.4	S	64.1	.45	13.3	N-S	U	67.0	8	67.0	6-1/4	B	101 C	85 O	880	U
Siete Cerros 66		63.5	32.1	52	44	4	75.4	1.48	12.1	U	59.0	.41	10.8	S-N	U	64.2	4	64.2	3-1/4	M-W	100 C	87 O	805	U
Sonora 64		63.5	36.5	66	32	2	76.2	1.56	13.9	S-Q	68.5	.42	12.5	N	S-Q	63.5	5	63.5	4	S	101 SlC	92 SlI	975	S
Tobari 66		63.7	35.0	50	46	4	75.3	1.56	13.3	S-Q	69.5	.40	11.6	N	S	62.3	4	62.3	3-3/4	M-W	90 O	87 O	825	Q-U
NK 1501		64.8	36.0	53	45	2	75.6	1.49	14.8	S	68.6	.36	13.6	N	S	64.4	5	64.4	4	S	100	91 I	975	S
NK 1502		65.2	39.5	65	33	2	76.2	1.45	14.3	S-Q	69.9	.34	12.8	N	S	62.8	5	62.8	3-3/4	S	101	91 I	1005	Q-S

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.

TABLE 3

QUALITY DATA ON FIELD PLOT NURSERY SAMPLES

Sutter, California

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.	
Azteca 67		65.8	40.2	80	20	0	77.0	1.57	11.3	U	66.5	.34	10.1	N-S	VS	59.7	8	59.7	5-3/4	S-M	106	85 O	825	U
Inia 66		64.7	46.5	79	19	2	76.9	1.49	10.3	U	65.5	.36	9.6	N-S	S	59.0	7	59.0	4-3/4	M	106 W	89 O	805	U
Nainari 60		61.2	48.1	84	14	2	77.1	1.66	9.1	U	63.0	.37	7.8	S	U	55.7	2	55.7	3	M S1D	106 C	90 T	720	U
Ramonia 50		61.7	49.0	78	21	1	76.9	1.69	10.3	U	63.5	.37	9.3	S-N	Q	59.7	3	59.7	2-3/4	W-M	102	90	805	U
Red River 68		64.9	40.7	66	33	1	76.3	1.68	10.5	U	64.7	.37	9.3	S-N	S	61.3	10	61.3	7	M-S	106 S1C	87 HT	775	U
Sonora 64		63.8	42.4	78	21	1	76.9	1.56	10.0	U	65.0	.36	8.7	N-S	S	58.7	9	58.7	5-3/4	W-M	103	88 HT	775	U
NK 1502		66.0	44.6	85	14	1	77.2	1.57	10.8	U	67.5	.33	9.8	S-N	VS	59.3	9	59.3	5-1/4	S-M	107 W	90 S1H	800	U
NK 1651		65.1	37.5	70	29	1	76.5	1.48	9.6	U	65.7	.34	8.3	N	S	56.0	11	56.0	7	M S1D	107 S1C	85 HT	675	U

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.

TABLE 4

QUALITY DATA ON FIELD PLOT NURSERY SAMPLES

Grand Junction, Colorado

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen Eva 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
NO NITROGEN																									
Chris	13751	63.5	35.2	74	26	0	76.7	1.68	13.1	S	62.6	.40	12.3	N-S	S	63.5	3	63.5	2-3/4	M	100 C	90 O	850	S	
Crim	13465	62.6	37.3	81	17	3	76.9	1.70	13.8	S	60.8	.39	12.5	N-S	S-Q	66.3	5	66.3	3-1/2	S-M	99	85 I	815	S-Q	
Nadadores 63	13931	61.7	45.0	83	15	2	77.1	1.64	11.5	Q	65.4	.36	10.3	S-N	S-Q	62.8	4	62.8	3	W-M	98	88 O	820	Q	
Pitic 62	13927	61.2	42.2	86	13	1	77.3	1.64	9.8	Q	54.7	.40	8.1	S	U	57.5	1	57.5	2	SlD	98	Soggy	685	U	
Waldron	13958	63.2	40.3	90	9	1	77.5	1.80	13.5	S	63.6	.39	11.6	N-S	S	63.8	5	63.8	3-1/2	S-M	100 SlC	90 I	860	S	
Ciano Sib S-4017		64.6	45.7	90	9	1	77.5	1.73	11.6	Q	66.2	.35	10.4	N-S	S	62.5	5	62.5	3-1/2	S-M	100	88 I	805	S-Q	2
NK X160		64.8	39.7	82	18	0	77.1	1.60	11.7	Q	66.6	.34	10.2	N-S	Q	61.6	6	61.6	4-1/4	M	99	86 O	780	Q-U	1
WS 1502		64.6	45.2	90	10	0	77.5	1.52	13.7	S	69.4	.30	12.0	N	VS	63.5	4	63.5	3	S	99	89 IO	915	S	4
80# NITROGEN/ACRE																									
Chris	13751	62.6	33.4	64	35	1	76.2	1.67	15.1	S	63.8	.37	14.1	N-S	S	66.3	4	66.3	2-1/2	S	100 SlC	87 I	925	S	
Crim	13465	61.4	36.9	75	23	2	76.7	1.74	15.1	S	62.5	.40	13.8	S-N	Q-S	67.9	5	67.9	3-3/4	S	98	85 T	895	S-Q	
Nadadores 63	13931	61.9	40.5	79	19	2	76.9	1.54	12.0	Q	66.2	.36	11.0	N-S	S	62.8	3	62.8	2-3/4	M	100	91	830	U	
Pitic 62	13927	60.7	42.2	69	30	1	76.4	1.60	11.6	U	54.9	.40	9.6	S	U	59.3	2	59.3	2	VW	100	90 H	750	U	
Waldron	13958	63.1	40.8	88	11	1	77.4	1.74	14.4	S	65.8	.37	13.2	N-S	S	64.4	5	64.4	3-1/4	S	98	90	905	S	
Ciano Sib S-4017		64.1	45.8	88	12	0	77.4	1.67	13.7	Q	68.2	.34	12.5	N-S	S-Q	64.7	5	64.7	3	S	101	93	910	Q	2
NK X160		65.0	39.1	78	21	1	76.9	1.64	13.7	Q	67.1	.35	12.2	N-S	S-Q	64.4	6	64.4	4	S-M	101	91	880	Q	2
WS 1502		64.9	45.0	91	9	0	77.6	1.55	13.7	Q	69.4	.30	12.5	N-S	S-Q	64.2	4	64.2	3-1/4	S	101	88 I	910	Q	2
160# NITROGEN/ACRE																									
Chris	13751	62.2	32.4	56	42	2	75.7	1.62	15.4	S	62.7	.38	14.7	S-N	S	64.4	3	64.4	2-1/4	S	100 SlC	89 I	935	S	
Crim	13465	59.7	36.6	78	20	2	76.8	2.00	15.8	S	59.5	.50	14.5	S-N	U	66.3	5	66.3	3-1/2	VS	88 D	83 OI	925	Q	
Nadadores 63		60.9	37.7	78	20	2	76.8	1.54	13.0	Q	65.1	.38	11.9	S-N	Q	64.7	4	64.7	2-1/2	M	99	94	890	S	
Pitic 62	13927	57.8	34.8	47	51	2	75.3	1.59	12.8	Q	54.3	.41	10.5	S	U	59.0	1	59.0	1-1/2	VW	98	90 SlH	810	U	
Waldron	13958	61.7	38.3	80	19	1	77.0	1.73	15.2	S	65.1	.41	14.0	N-S	S	66.3	5	66.3	3-3/4	VS	98	90	950	S-Q	
Ciano Sib S-4017		63.7	46.5	86	13	1	77.3	1.59	14.1	Q-S	67.9	.34	12.7	N-S	S-Q	65.0	5	65.0	3	S-M	99	93	900	S-Q	2
NK X160		63.8	35.7	60	40	0	76.0	1.59	13.9	Q	67.9	.35	12.6	N	S-Q	63.5	5	63.5	4	S	101	87	905	Q	2
WS 1502		64.7	44.4	88	11	1	77.4	1.65	14.5	S	69.9	.30	13.1	N-S	S-Q	65.7	5	65.7	3-1/4	VS	100 W	89	965	S-Q	3

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V- Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 5

QUALITY DATA ON FIELD PLOT NURSERY SAMPLES

Carrington, North Dakota

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen Eva 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
DRYLAND																									
Chris	13751	63.7	33.2	56	44	0	75.8	1.62	14.6	S	67.0	.35	13.7	N-S	S	65.7	3	65.7	2-3/4	S-M	102 S1C	90 S1I	950	S	
Ciano 67		63.0	36.5	62	37	1	76.1	1.64	15.7	S	69.1	.35	14.7	N-S	S	67.9	6	67.9	4	S	100 W	95 O	1125	S	
Inia 66		62.6	39.1	66	33	1	76.3	1.58	14.5	S	67.6	.31	13.6	N-S	VS	65.0	5	65.0	4	S	102 W	90 S1O	1015	S	
Justin	13462	62.9	36.4	71	28	1	76.5	1.76	14.6	S	67.7	.35	13.8	N	S	65.7	5	65.7	3-3/4	VS	101	88 I	955	S	
Manitou	13775	62.9	31.6	58	42	0	75.9	1.68	14.6	S	67.2	.37	13.7	N-S	S	64.4	4	64.4	2-3/4	S-M	103 S1C	89 I	925	S	
Neepawa		63.5	34.1	69	31	0	76.5	1.62	14.5	S	66.4	.36	13.9	N-S	S	64.7	3	64.7	2-1/4	S-M	101 S1C	91	905	S-Q	
Polk	13773	64.9	40.2	74	25	1	76.7	1.61	14.6	S	67.9	.33	13.4	N	S	65.0	5	65.0	3-1/4	S	103 W	97	1135	S	
Red River 68	14193	63.9	32.9	38	61	1	74.9	1.65	14.3	S	68.2	.38	13.6	N	S	67.6	7	67.6	5	VS	102	84 OI	955	S	
Selkirk	13100	61.9	35.7	66	33	1	76.3	1.80	13.1	S-Q	68.5	.38	12.4	N	S	63.2	4	63.2	3-1/2	M-S	101 S1C	89 I	850	S-Q	
Thatcher	10003	62.3	38.3	37	62	1	74.8	1.62	13.4	S-Q	67.2	.39	12.8	N	S	63.5	5	63.5	3-3/4	S	99	83 OI	855	Q-S	
Waldron	13958	61.9	36.1	78	21	1	76.9	1.75	15.4	S	66.7	.37	14.4	N	S	66.6	5	66.6	3	S-M	100	87 O	1100	S	
GWO 1809		63.9	35.7	72	27	1	76.6	1.53	14.8	S	68.0	.33	13.8	N	S	65.3	5	65.3	3-1/4	S	100	90 S1I	1010	S	4
GWO 1812		64.2	27.7	47	53	0	75.4	1.67	14.1	S	66.6	.34	13.2	N-S	S	66.3	4	66.3	2	S-M	102	89 S1OI	910	S-Q	3
II-62-2		64.0	31.4	52	46	2	75.5	1.57	12.4	Q	69.3	.36	11.5	N	S	62.8	4	62.8	3-1/4	S-M	99	91	900	Q	2
II-62-61		62.6	36.4	64	35	1	76.2	1.61	14.6	S	70.6	.31	13.4	N	VS	64.7	4	64.7	3-1/4	M-S	101 S1C	88 IO	950	S	4
ND 484		63.6	38.2	80	19	1	77.0	1.55	13.9	S	69.3	.34	12.9	N	S	63.8	4	63.8	2-3/4	S	104 BC	83 OI	950	S-Q	3
ND 487		63.0	34.1	61	37	2	76.0	1.55	13.6	S-Q	68.7	.31	12.2	N	VS	63.5	3	63.5	2-1/2	M	100 S1C	90 S1O	900	S-Q	3
Wisc. 271		63.2	34.0	48	51	1	75.4	1.63	13.8	S	69.9	.32	12.9	N	VS	63.5	5	63.5	3-3/4	S	101 S1C	90 I	950	S-Q	3

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 6

QUALITY DATA ON FIELD PLOT NURSERY SAMPLES

Carrington, North Dakota

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
IRRIGATED																									
Chris	13751	62.5	28.7	36	63	1	74.8	1.61	15.1	S	65.8	.35	14.4	N-S	S	62.5	4	62.5	3	S	98	90 O	1030	S	
Ciano 67		63.9	35.2	41	58	1	75.0	1.69	14.6	S	68.6	.34	13.8	N	S	63.5	5	63.5	4-3/4	S	100	95	1075	S	
Inia 66		63.0	36.6	50	49	1	75.5	1.56	13.3	S-Q	66.0	.33	12.6	N-S	S	61.9	6	61.9	4-1/4	S	99	93 SlI	995	Q-S	
Justin	13462	61.9	31.4	44	54	2	75.1	1.76	14.8	S	67.6	.35	14.0	N-S	S	64.2	5	64.2	4-1/4	S	90 DC	92 SlI	1005	S	
Manitou	13775	61.2	26.5	16	82	2	73.7	1.75	15.2	S	66.0	.34	14.2	N	S	62.8	3	62.8	3	S-M	100 C	85 IO	980	S	
Neepawa		62.9	32.6	58	41	1	75.9	1.75	15.5	S	63.0	.35	14.4	N-S	Q-S	63.5	3	63.5	2-1/4	S	100 C	80 O	950	S-Q	
Polk	13773	61.4	30.8	29	68	3	74.3	1.78	15.1	S	65.1	.38	14.1	N	S-Q	64.2	5	64.2	4	S	100	83 OI	1090	S	
Selkirk	13100	60.2	32.1	42	56	2	75.0	1.72	14.3	S	68.9	.38	13.5	N	S	62.8	3	62.8	2-3/4	M-S	98 DC	94	965	S	
Thatcher	10003	60.4	22.7	4	92	4	73.0	1.67	13.6	S-Q	67.8	.37	12.9	N	S	61.6	3	61.6	2-3/4	S	101 BC	90 OI	1000	S-Q	
Waldron	13958	59.9	30.6	44	55	1	75.2	1.74	14.9	S	67.0	.39	14.0	N	S	64.2	5	64.2	3-1/2	S	100 C	85 OI	1050	S	
GWO 1809		61.5	26.8	24	74	2	74.1	1.64	14.6	S	67.8	.35	13.3	N	S	63.8	5	63.8	4	S	98 DC	87 IO	1010	S	4
II-62-2		62.4	32.8	54	45	1	75.7	1.61	13.7	S-Q	67.1	.36	12.6	N	S	63.8	4	63.8	2-3/4	S-M	100 C	88 IO	930	S	3
II-62-61		62.9	29.4	29	68	3	76.3	1.64	12.8	Q	68.9	.39	11.6	N	S	62.5	3	62.5	3-1/2	S-M	101 BC	91 SlI	980	S	2
ND 487		60.5	28.7	30	67	3	74.4	1.82	14.7	S	70.1	.33	13.6	N	S	64.4	5	64.4	4-3/4	S	101 BC	92 O	1015	S	4

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 7

QUALITY DATA ON FIELD PLOT NURSERY SAMPLES

Dickinson, North Dakota

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	59.2	29.8	27	67	6	74.1	1.79	16.9	S	66.0	.35	15.7	N	S	67.3	5	67.3	3-1/2	VS	101	90 IO	1080	S	
Ciano 67		60.0	29.8	14	80	6	73.4	1.77	16.9	S	67.4	.37	16.1	N	S	66.6	5	66.6	4	S	102	90 O	1180	S	
Fortuna	13596	58.9	31.2	11	82	7	73.2	1.77	15.9	S	67.7	.37	15.1	N	S	65.3	4	65.3	2-3/4	S	102 BC	90 O	1120	S	
Inia 66		61.0	31.2	27	68	5	74.1	1.56	14.6	S-Q	66.8	.34	13.7	N	S	64.2	5	64.2	3-1/2	S	101	85 IO	975	Q-S	
Justin	13462	60.6	29.0	17	79	4	73.7	1.62	16.1	S	63.5	.36	15.6	N-S	S	65.0	3	65.0	2-1/4	S	103	91 O	1025	S	
Manitou	13775	60.0	30.7	35	62	3	74.6	1.77	16.0	S	64.0	.37	15.5	N-S	S	64.7	3	64.7	2	S	100 S1C	82 OI	1020	Q	
Neepawa		60.8	30.3	39	57	4	74.8	1.78	15.9	S	61.6	.41	15.1	N-S	Q	64.4	3	64.4	2-1/2	S-M	100 C	85 O	855	Q	
Polk	13773	61.5	32.8	10	85	5	73.3	1.65	15.5	S	65.5	.40	14.4	N	S-Q	64.4	4	64.4	3	S	100	88 O	1100	S	
Red River 68	14193	60.6	29.4	22	73	5	73.9	1.78	15.7	S	65.3	.43	15.5	N	U	69.1	7	69.1	5	B	101	81 OI	1030	U	
Selkirk	13100	59.2	28.2	22	74	2	74.0	1.67	15.4	S	66.8	.39	14.5	N	S	65.0	4	65.0	3-1/2	VS	102	89 OI	1015	S	
Sheridan	13586	60.4	27.0	7	85	8	73.0	1.77	14.9	S-Q	63.9	.40	14.1	N-S	S-Q	64.2	4	64.2	3-1/4	S	102	92 S1O	1050	S	
Thatcher	10003	59.9	27.4	17	78	5	75.6	1.69	15.3	S	64.5	.38	14.5	N	S	64.4	3	64.4	2-1/2	S-M	98 DC	91 S1O	970	S-Q	
Waldron	13958	60.1	29.2	35	62	3	74.6	1.73	16.5	S	63.7	.39	15.4	N	S-Q	66.0	4	66.0	2-1/4	S	101 S1C	90 O	985	S	
GWO 1809		60.5	28.0	28	67	5	74.1	1.62	15.3	S	66.0	.36	14.1	N	S	65.7	5	65.7	3-1/4	S	100 C	86 IO	1025	S	3
GWO 1812		61.0	33.0	25	71	4	74.1	1.82	15.8	S	62.7	.40	14.5	N-S	Q	66.6	3	66.6	1-3/4	M-S	101 C	83 OI	965	U	1
II-62-2		61.0	32.6	48	49	3	75.3	1.74	15.1	S	66.4	.39	14.0	N	S-Q	65.7	4	65.7	2-1/2	S	102 VCB	89 OI	940	S	3
II-62-61		63.4	30.3	32	64	4	74.4	1.61	13.4	Q-U	67.2	.38	12.6	N	S	63.5	4	63.5	3	S	99	90 OI	965	Q	1
ND 483		57.2	23.6	4	88	8	72.8	1.85	15.4	S	66.9	.42	15.0	N	Q-S	66.0	4	66.0	3-1/4	S	101 C	88 O	1070	S	3
ND 486		57.8	26.2	6	87	7	73.0	1.87	15.0	S	67.5	.38	14.3	N	S	64.7	3	64.7	2-3/4	M-S	100 C	95	975	S	3
S 6579		59.5	31.2	27	64	9	73.9	1.71	15.2	S	66.9	.37	14.6	N	S	65.0	4	65.0	3-1/4	S-M	101 C	93 S1O	975	S	3
S 6694		60.0	30.9	24	70	6	73.9	1.71	15.2	S	66.3	.41	14.7	N	S-Q	66.6	5	66.6	4	S	100	91 S1IO	1055	S	3
Wisc. 271		60.7	27.9	23	73	4	74.0	1.70	15.4	S	69.2	.35	14.5	N	S	65.3	5	65.3	3-3/4	S	101 C	94	1040	S	3

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 8

QUALITY DATA ON FIELD PLOT NURSERY SAMPLES

Williston, North Dakota

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen Eva 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Canthatch	13345	62.6	29.3	30	69	1	74.5	1.61	14.1	S	65.9	.34	12.5	N-S	S-Q	63.5	3	63.5	2-1/4	S-M	101 C	89 OI	875	Q	
Chinook	13220	62.9	28.7	32	66	2	74.5	1.66	15.1	S	68.0	.32	14.0	N-S	S	64.2	3	64.2	2-3/4	S-M	100	87 I	885	S-Q	
Chris	13751	62.8	28.0	16	82	2	73.7	1.64	14.6	S	67.8	.32	14.1	N	S	65.0	4	65.0	3	S	103	92 O	995	S	
Ciano 67		63.4	29.9	21	77	2	74.0	1.70	14.5	S	69.5	.32	13.7	N	S	64.4	5	64.4	3-1/2	VS	99 DW	91 O	1080	S	
Crim	13465	62.6	30.6	47	49	4	75.2	1.70	14.3	S	67.2	.36	12.8	N	S-Q	65.7	5	65.7	4	S-M	102	89 I	890	S-Q	
Fortuna	13596	62.3	31.2	28	72	0	74.4	1.71	14.0	S	70.5	.34	13.2	N	S	64.2	4	64.2	3	S	99 C	94	995	S-Q	
Inia 66		63.3	35.0	52	47	1	75.6	1.57	14.2	S	66.7	.31	13.5	N-S	S	65.3	4	65.3	3	S-M	101 C	88 O	890	S-Q	
Justin	13462	60.6	27.5	27	71	2	74.3	1.74	15.7	S	68.5	.33	14.9	N	S	66.6	5	66.6	3-1/2	VS	98 C	86 IO	975	S	
Manitou	13775	62.5	27.8	24	74	2	74.1	1.66	14.1	S	65.5	.38	13.4	N-S	S-Q	63.8	4	63.8	2-3/4	S	100 VC	88 I	910	S-Q	
Neepawa		62.4	27.5	28	71	1	74.4	1.67	14.3	S	66.5	.36	13.6	N-S	S	63.5	3	63.5	2-1/4	S	103 VC	89 OI	905	S-Q	
Polk	13773	63.5	32.3	42	56	2	75.0	1.48	14.4	S	67.6	.36	13.7	N	S	64.2	4	64.2	3	S	101	89 IO	1045	S-Q	
Red River 68	14193	63.1	29.1	4	90	6	72.9	1.66	13.9	S-Q	67.3	.38	13.3	N	S-Q	67.0	7	67.0	5-1/2	VS	101 S1C	90	905	S-Q	
Selkirk	13100	61.5	32.6	46	54	0	75.3	1.63	13.8	S-Q	69.6	.36	13.1	N	S	63.8	3	63.8	3	S-M	101 S1C	91	895	S-Q	
Thatcher	10003	62.7	27.0	27	72	1	74.3	1.62	14.3	S	67.2	.36	13.4	N	S	63.5	4	63.5	2-3/4	S	102 S1C	89 IO	900	S-Q	
Waldron	13958	62.4	34.0	58	41	1	75.9	1.79	15.9	S	64.8	.37	15.1	N-S	S-Q	66.0	4	66.0	2-1/2	S	101 C	87 OI	955	S	
II-62-2		61.4	31.1	46	47	7	75.0	1.60	13.5	S-Q	67.7	.37	12.6	N	S	64.7	5	64.7	3	S	100 C	91 I	920	S	4
II-62-61		62.2	27.6	23	75	2	74.1	1.56	12.3	Q	67.3	.37	11.3	N	S	62.5	4	62.5	4	S-M	103 S1C	90 O	900	Q-U	1
ND 485		61.0	27.4	9	88	3	73.3	1.66	13.4	Q	69.0	.32	12.5	N	S	63.8	3	63.8	2-1/4	S-M	102 S1C	93 S1O	875	Q	2
ND 491		62.9	32.2	54	44	2	75.6	1.73	13.9	S-Q	65.5	.37	12.9	N-S	Q	64.7	5	64.7	2-1/2	S	99 C	92 S1O	940	S	2
S 6579		61.2	30.5	38	60	2	74.8	1.70	14.9	S	69.0	.33	14.0	N	S	65.3	5	65.3	4	S	101 C	94	985	S	4
S 6694		60.4	29.1	21	76	3	73.9	1.79	15.3	S	68.2	.40	14.8	N	S-Q	67.3	7	67.3	4-3/4	VS	98	96	1100	S	4
WS 1809		62.9	28.4	28	70	2	74.3	1.57	14.0	S-Q	67.6	.34	13.0	N	S	64.4	5	64.4	3-1/4	S	100	91 S1O	965	S-Q	3
WS 1812		63.2	30.4	10	88	2	73.4	1.66	14.4	S-Q	66.5	.33	13.1	N-S	S-Q	67.6	4	67.6	2-1/2	S	102 S1C	95	925	S-Q	2
Wisc. 271		62.4	28.0	15	80	5	73.5	1.62	13.3	S-Q	69.3	.31	12.8	N	S	64.2	5	64.2	4	S	102 C	89 I	915	S-Q	2

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 9

QUALITY DATA ON FIELD PLOT NURSERY SAMPLES

Madison, Wisconsin

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen Eva 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Lathrop	13457	60.6	30.3	18	80	2	73.8	1.88	12.5	Q	68.8	.38	10.9	N-S	VS	59.3	4	59.3	3-1/4	M	102 BC	92 S1I	925	Q	
Polk	13773	62.8	31.2	39	60	1	74.9	1.89	14.5	S	64.0	.41	13.0	N-S	S	61.9	5	61.9	3-1/2	S	101	97	1025	S	
Selkirk	13100	57.6	30.3	26	73	1	74.3	2.06	13.6	S-Q	66.7	.40	12.8	N	S	60.3	3	60.3	3	M	100 S1C	91 S1I	910	S-Q	
Waldron	13958	59.5	29.9	30	69	1	74.5	1.93	15.1	S	63.9	.43	13.7	N-S	S	62.3	5	62.3	4-1/4	S	98	84 IO	965	S	
W 261		59.4	30.6	34	64	2	74.6	2.01	14.5	S	66.0	.38	13.2	N-S	VS	63.5	7	63.5	5-1/4	S	101 C	90 S1O	995	S	4
W 270		60.2	29.7	45	54	1	75.2	1.94	14.0	S	66.4	.36	12.8	N-S	VS	62.5	6	62.5	4-1/2	S	99	88 IO	990	S	4
W 271		61.0	30.7	23	75	2	74.1	1.89	14.1	S	66.8	.36	12.9	N-S	VS	61.3	6	61.3	4-3/4	S	98	94 S1O	985	S	3
678-1-6-9		60.2	31.8	47	51	2	75.3	1.89	13.5	S-Q	66.1	.36	12.4	N-S	VS	61.9	6	61.9	4-1/2	S	99	87 IO	1030	S	3

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 10

QUALITY DATA ON FIELD PLOT STATE AVERAGES

1969 CR

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bal Eva 3
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.	
COLORADO																								
Chris	13751	62.8	33.7	65	34	1	76.2	1.66	14.5	S	63.0	.38	13.7	N-S	S	64.7	3	64.7	2-1/2	S-M	100 S1C	89 I	903	S
Crim	13465	61.2	36.9	78	20	2	76.8	1.81	14.9	S	60.9	.43	13.6	S-N	Q	66.8	5	66.8	3-1/2	S	95	84 I	878	S
1969 Average 9/		62.0	35.3	72	27	1	76.5	1.74	14.7	S	62.0	.41	13.7	N-S	S-Q	65.8	4	65.8	3	S-M	98	87 I	891	S
1968 Average 9/		57.4	33.0	71	27	2	76.5	1.66	15.7	S	65.3	.34	14.5	N	S	66.8	5	66.8	3	S-M	103	88 O	1000	S
NORTH DAKOTA																								
Chris	13751	62.1	29.9	34	64	2	74.6	1.67	15.3	S	66.7	.34	14.5	N-S	S	65.1	4	65.1	3	S	101	91 O	1014	S
Justin	13462	61.5	31.1	40	58	2	74.9	1.72	15.3	S	66.8	.35	14.6	N-S	S	65.4	5	65.4	3-1/2	VS	98 S1C	89 IO	990	S
Selkirk	13100	60.7	32.2	44	55	1	75.2	1.71	14.2	S-Q	68.5	.38	13.4	N	S	63.7	4	63.7	3-1/4	S-M	101 S1C	91 I	931	S
1969 Average 10/		61.4	31.1	39	59	2	74.9	1.70	14.9	S	67.3	.36	14.2	N-S	S	64.7	4	64.7	3-1/4	S	100 S1C	90 IO	978	S
1968 Average 10/		58.6	29.5	24	73	3	74.1	1.66	15.5	S	67.6	.35	14.5	N	S	65.2	5	65.2	3-3/4	S	100 S1C	94	978	S
CROP YEAR AVERAGE																								
Crop Average 1969		61.7	32.1	56	43	1	75.7	1.72	14.8	S	64.7	.39	14.0	N-S	S	65.3	4	65.3	3	S-M	99 S1C	89 IO	935	S
Crop Average 1968		58.0	31.3	48	49	3	75.3	1.66	15.6	S	66.5	.35	14.5	N	S	66.0	5	66.0	3-1/4	S	102 S1C	91 S1O	989	S

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ Averages are obtained using the results for the varieties of Chris and Crim.
10/ Averages are obtained using the results for the varieties of Chris, Justin and Selkirk.

TABLE 11

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Sandpoint, Idaho

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	61.5	32.7	57	42	1	75.8	1.50	15.6	S	58.5	.44	15.4	N	S	65.0	2	65.0	1-3/4	M	103	83 O	220	S	
Justin	13462	62.0	37.0	71	28	1	76.5	1.56	15.1	S	59.5	.43	14.3	N	S	64.7	3	64.7	2-1/4	M	102 S1C	92	206	S	
Marquis	3461	62.5	33.3	55	44	1	75.7	1.58	14.2	S	63.8	.43	13.5	N	VS	63.5	2	63.5	2	M	101	85 O	204	S-Q	
Neepawa		62.5	36.6	51	48	1	75.5	1.49	14.1	S	58.4	.42	13.2	N	S-Q	64.4	4	64.4	3-1/2	M	101 C	92	204	S	
Polk	13773	64.0	40.2	73	26	1	76.6	1.53	14.3	S	59.4	.43	13.8	N	S	65.0	3	65.0	2-1/2	M	100	90 O	211	S	
Red River 68	14193	63.5	36.2	39	60	1	74.9	1.50	14.1	S	58.2	.51	13.4	N	Q	66.3	5	66.3	4-1/2	S-M	104 BC	85 O	192	S	
Thatcher	10003	62.0	28.2	17	82	1	73.8	1.59	13.4	Q	64.8	.44	12.6	N	S	61.9	2	61.9	2-1/2	M	104 S1C	91	192	Q	
Waldron	13958	61.5	38.8	84	16	0	77.2	1.68	15.5	S	57.1	.47	14.4	N	Q	64.2	2	64.2	2-1/4	M	101	80 O	218	S-Q	
RL 4220		62.5	34.5	57	43	0	75.9	1.56	15.7	S	56.3	.45	14.8	N	Q	63.2	2	63.2	1-1/2	W	101 S1C	83 O	199	U	1
II-62-2		61.5	36.9	77	22	1	76.8	1.52	14.1	S	57.1	.44	12.8	N	Q	62.5	2	62.5	2	M	102 S1C	93	198	Q	2
II-62-61		63.5	37.0	78	22	0	76.9	1.40	12.5	Q	59.0	.44	11.1	N	Q	61.6	2	61.6	2-1/2	M	104	95	189	U	1
MT 677		59.5	24.6	4	90	6	72.9	1.53	12.5	Q	54.6	.52	11.5	N-S	U	61.0	3	61.0	3-1/2	M	101	97	200	U	1
MT 6723		61.0	28.0	12	85	3	73.5	1.56	12.4	Q	55.7	.48	11.4	N	Q	61.3	3	61.3	2-3/4	M	102	97	196	U	1
ND 492		62.0	35.2	62	37	1	76.1	1.64	14.9	S	54.3	.48	13.6	N	S-Q	64.2	3	64.2	2-1/2	M	104 W	89 O	214	S	3
ND 493		60.5	39.4	75	24	1	76.7	1.52	14.7	S	61.4	.36	13.2	N	VS	62.8	2	62.8	2-3/4	M-S	103 C	83 O	196	Q	2
ND 494		61.0	37.0	70	29	1	76.5	1.65	13.5	S	57.9	.46	12.4	N	S-Q	63.5	3	63.5	2-3/4	M-S	105	97	198	S-Q	3
ND 495		60.5	36.8	63	36	1	76.1	1.72	15.3	S	58.5	.42	14.1	N	S	64.2	4	64.2	3-1/2	M-S	106	95	211	S	4
S 6579		60.0	37.7	70	29	1	76.5	1.59	14.3	S	58.5	.43	12.9	N	S-Q	64.4	4	64.4	3-1/4	M-S	104	94	212	S	3
S 6694		63.5	40.2	75	24	1	76.7	1.52	13.8	S-Q	57.1	.48	13.2	N	S	64.2	4	64.2	2-3/4	M	106	96	202	S	3
Wisc. 271		63.0	41.0	78	21	1	76.9	1.51	14.2	S	58.0	.44	13.6	N	S	64.2	4	64.2	3-1/4	M	107 S1C	94	203	S	4
Wisc. 678-1-6-9		62.5	34.5	65	34	1	76.2	1.51	13.3	S-Q	57.6	.44	12.2	N	S-Q	63.8	3	63.8	3-1/2	M	104	93	208	S-Q	2

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 12

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Crookston, Minnesota

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen Eva 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	64.0	32.6	55	43	2	75.7	1.79	13.6	S	55.7	.48	13.0	N	S	62.8	3	62.8	2-1/2	S-M	101 S1C	93	195	S	
Justin	13462	62.5	36.0	57	41	2	75.8	1.87	14.1	S	55.7	.47	13.4	N-S	S	62.5	4	62.5	3-1/2	S	100 S1C	91 O	183	S	
Marquis	3461	61.0	29.8	22	75	3	74.0	1.80	12.5	S-Q	52.5	.52	11.9	N-S	Q	59.7	4	59.7	3-3/4	M-S	100 S1C	91 O	183	S	
Neepawa		62.5	33.9	49	49	2	75.4	1.73	14.3	S	54.3	.45	12.9	N-S	S	61.3	2	61.3	2-1/4	M-S	101 C	92	188	S	
Polk	13773	63.5	40.3	63	34	3	76.0	1.74	12.7	S-Q	54.5	.47	12.0	N-S	S	61.0	4	61.0	3-1/2	M-S	101	95	203	S	
Red River 68	14193	64.0	34.6	20	77	3	73.9	1.68	13.3	S	55.6	.47	12.5	N-S	S	63.8	7	63.8	6-1/2	VS	102 S1C	92	181	Q	
Selkirk	13100	61.5	37.5	54	43	3	75.6	1.80	12.7	S-Q	55.4	.49	12.1	N-S	S	58.7	3	58.7	3-1/2	M-S	101	93	186	S-Q	
Thatcher	10003	62.0	40.2	14	84	2	73.6	1.70	13.0	S	54.3	.50	12.2	N-S	S	59.0	4	59.0	3-3/4	M-S	104 S1C	92 S1I	192	S	
Waldron	13958	62.0	36.8	67	29	4	76.2	1.84	14.0	S	55.1	.45	12.9	N-S	S	61.9	4	61.9	3-1/4	S	98	89 OI	204	S	
RL 4220		62.5	34.4	54	42	4	75.5	1.63	12.6	S-Q	56.1	.45	11.4	N-S	S	62.5	3	62.5	3	M	100 S1C	93	185	S	3
II-62-2		62.0	35.6	63	33	4	76.0	1.65	12.9	S	55.7	.44	11.7	N-S	S-Q	64.7	5	64.7	4-1/4	M-S	102 C	89 O	191	S	3
II-62-61		63.5	34.2	47	49	4	75.2	1.67	11.3	Q	56.5	.48	10.3	N-S	S-Q	60.0	4	60.0	4-1/4	M	96	93 C	182	S	2
MT 677		60.0	25.3	6	86	8	73.0	1.85	12.4	Q-S	56.5	.51	11.3	S-N	Q	59.7	4	59.7	4	M-S	96	91 S1OI	188	S-Q	2
MT 6723		60.5	30.5	35	58	7	74.4	1.83	13.5	S	57.0	.46	12.3	S-N	S-Q	61.9	3	61.9	3-1/2	S-M	100	90 O	205	S	3
ND 492		63.5	35.7	65	33	2	76.2	1.74	13.5	S	56.1	.43	11.9	N-S	S	61.9	4	61.9	3-1/4	S-M	102 W	94	210	S	3
ND 493		63.0	37.3	61	36	3	75.9	1.76	13.5	S	61.6	.33	12.6	N-S	VS	61.9	4	61.6	4-1/4	S-M	101 S1C	90 S1O	182	S	3
ND 494		61.5	36.6	57	40	3	75.7	1.73	13.1	S	57.8	.41	12.1	N-S	S	62.5	3	62.5	3-1/4	S-M	102 S1C	93 S1O	193	S	3
ND 495		62.0	36.2	56	36	8	75.5	1.89	14.6	S	57.2	.41	13.3	N-S	S	63.2	4	63.2	4	S	106 BC	86 OI	205	S	3
S 6579		62.0	40.7	64	33	3	76.1	16.6	13.3	S	58.1	.46	12.3	N-S	S	62.8	4	62.8	3-1/2	S-M	104	91 O	200	S	3
S 6694		63.5	38.6	67	31	2	76.3	1.66	12.8	S-Q	58.3	.46	12.0	N-S	S	61.9	4	61.9	3-3/4	S	103	90 S1I	201	S	3
Wisc. 271		63.0	33.7	41	55	4	74.9	1.59	12.7	S-Q	59.1	.39	11.9	N-S	VS	60.3	5	60.3	5	S-M	98	93	180	S	3
Wisc. 678-1-6-9		62.5	37.0	60	37	3	75.9	1.62	12.9	S	57.8	.37	12.1	N-S	VS	62.8	4	62.8	5-1/4	S-M	103 C	85 O	181	S	3

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 13

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Morris, Minnesota

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen Eva 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	63.0	30.4	27	71	2	74.3	1.66	15.1	S	55.2	.46	14.6	N	S	66.3	5	66.3	3-1/4	S	102	90 O	199	S	
Justin	13462	61.0	31.3	41	56	3	74.9	1.77	15.6	S	55.9	.46	15.3	N-S	S	65.7	6	65.7	4	S	99	91 O	205	S	
Marquis	3461	60.5	25.6	9	85	6	73.2	1.78	12.4	Q	52.6	.53	11.6	N-S	Q	60.3	5	60.3	4-1/4	M	100 S1C	93	179	Q	
Neepawa		62.0	31.7	31	64	5	74.4	1.74	15.0	S	54.0	.49	14.8	N-S	S-Q	63.8	3	63.8	2-3/4	S	100 S1C	96 S1I	195	S	
Polk	13773	63.5	37.9	57	39	4	75.7	1.61	15.3	S	54.7	.45	14.9	N-S	S	67.6	6	67.6	5	S	101	88 OI	200	S	
Red River 68	14193	64.5	36.8	31	66	3	74.4	1.63	14.0	S	55.9	.47	13.4	N-S	S	68.2	9	68.2	10-1/2	B	98	87 O	180	U	
Selkirk	13100	60.0	33.8	33	63	4	74.5	1.73	14.3	S	56.8	.46	13.7	N	S	63.2	4	63.2	4	M-S	97 C	98	187	S	
Thatcher	10003	61.0	26.2	13	83	4	73.5	1.72	13.4	S-Q	55.9	.51	12.9	N	Q	64.2	7	64.2	5	M-S	100 S1C	98	185	S	
Waldron	13958	61.0	35.6	69	29	2	76.4	1.82	15.9	S	51.9	.48	14.7	N-S	S-Q	64.4	4	64.4	3-1/4	S	96 C	95 S1I	202	S	
RL 4220		62.0	34.1	45	53	2	75.2	1.59	13.2	Q	55.1	.46	12.6	N-S	S	61.3	5	61.3	4	S-M	101	94 S1I	190	Q	2
II-62-2		62.5	36.9	64	34	2	76.1	1.74	14.3	S	56.3	.45	13.5	N	S	63.5	4	63.5	3-1/2	S	100 S1C	95	190	S	3
II-62-61		64.0	34.4	47	49	4	75.2	1.61	12.5	Q	57.6	.45	11.4	N	S	59.7	5	59.7	3-1/2	M-S	99	93 S1O	179	Q	2
MT 677		60.0	23.1	3	89	8	72.8	1.79	12.4	Q	54.0	.49	11.6	S-N	Q	59.7	6	59.7	4-1/2	S-M	100 S1C	98	180	Q	2
MT 6723		59.0	24.8	4	89	7	72.9	1.79	12.5	Q	54.5	.49	11.7	N-S	S	59.7	5	59.7	3-1/2	M-S	100	93 S1O	203	Q	2
ND 492		62.5	36.6	65	33	2	76.2	1.75	15.4	S	52.1	.50	14.2	N-S	Q	63.8	4	63.8	3-1/4	S-M	101 W	95	216	S	3
ND 493		61.0	35.0	45	53	2	75.2	1.75	14.6	S	58.5	.36	13.4	N-S	VS	61.0	3	61.0	3-1/2	S-M	99	93 S1I	182	Q-S	3
ND 494		62.0	34.0	48	48	4	75.2	1.77	13.2	Q	56.1	.42	12.4	N-S	S	61.9	5	61.9	4	M-S	98	95	180	S-Q	2
ND 495		60.5	34.8	49	47	4	75.3	1.89	14.8	S	55.1	.43	13.5	N-S	S	61.0	5	61.0	3-3/4	S	103 BC	88 IO	187	Q-S	2
S 6579		61.0	37.6	51	46	3	75.4	1.68	14.7	S	54.9	.45	14.3	N-S	S	61.6	5	61.6	4-1/2	S	101	91 S1I	203	S-Q	3
S 6694		63.0	37.0	43	53	4	75.0	1.66	13.7	S	55.7	.48	13.4	N	S	60.0	5	60.0	4	S-M	99	89 IO	199	Q	2
Wisc. 271		62.0	30.2	21	75	4	73.9	1.63	14.0	S	57.1	.42	13.2	N	S	62.5	6	62.5	5-1/4	S-M	98	98	187	S	3
Wisc. 678-1-6-9		62.0	35.1	43	54	3	75.0	1.61	13.5	S-Q	55.7	.40	12.4	N-S	S	61.9	6	61.9	5-1/2	S	96	97	180	S-Q	2

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 14

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

St. Paul, Minnesota

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen Eva 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	61.5	31.2	42	54	4	75.0	1.87	14.2	S	53.5	.48	13.3	N-S	S	61.3	2	61.3	2-1/2	S-M	98	88 O	196	S	
Justin	13462	60.5	33.6	53	44	3	75.5	1.90	13.8	S	55.9	.47	12.8	N-S	S	60.7	4	60.7	3-3/4	S-M	101	82 O	193	S	
Marquis	3461	61.5	33.2	55	43	2	75.7	1.85	12.5	Q	53.7	.52	11.8	N-S	S	59.0	2	59.0	2-3/4	MS1D	103	92	173	Q	
Neepawa		60.0	43.7	50	48	2	75.4	1.83	14.0	S	50.0	.48	12.7	S-N	Q	60.0	2	60.0	2-1/4	M	102 C	91	160	Q	
Polk	13773	61.0	38.5	63	35	2	76.1	1.84	14.7	S	52.4	.49	13.6	N-S	S	61.9	3	61.9	3-1/4	S-M	97	85 OI	209	S	
Red River 68	14193	60.5	36.1	43	56	1	75.1	1.85	14.2	S	50.9	.52	13.0	N-S	Q	66.3	6	66.3	4-1/2	S	92	88 O	170	Q	
Selkirk	13100	57.5	38.2	62	35	3	76.0	1.95	13.4	S	55.2	.49	12.6	N-S	S	60.3	3	60.3	3	M	102	92 S10	181	S	
Thatcher	10003	59.5	30.6	45	53	2	75.2	1.80	12.7	S	52.1	.50	11.5	N-S	S-Q	58.1	3	58.1	3-1/4	M S1D	101	91 S1I	166	U-Q	
Waldron	13958	60.0	35.6	59	38	3	75.8	1.95	15.0	S	52.6	.47	13.6	N-S	S	61.9	2	61.9	3	M-S	101 S1C	87 O	180	S	
RL 4220		59.0	32.7	57	40	3	75.7	1.79	12.7	S	54.0	.49	11.3	N-S	S	59.0	2	59.0	2-1/2	M	105	92 C	164	Q	2
II-62-2		61.0	35.0	55	43	2	75.7	1.78	15.5	S	54.5	.47	14.2	N-S	S	62.5	2	62.5	2-1/4	M-S	104 C	90 S10	174	S-Q	3
II-62-61		60.5	31.7	56	41	3	75.7	1.72	12.2	Q	55.9	.46	10.5	N-S	S	57.5	2	57.5	2-3/4	M	101	90	160	Q-U	1
MT 677		59.0	28.6	43	54	3	75.0	1.80	12.9	S-Q	53.7	.47	11.6	S-N	Q	59.3	2	59.3	2-1/2	M-S	101	91	161	Q	2
MT 6723		59.5	27.5	47	50	3	75.2	1.82	12.4	Q	53.3	.46	11.4	S-N	Q	58.7	2	58.7	2-1/2	M-S	101	92	177	S-Q	2
ND 492		58.0	36.9	60	37	3	75.9	1.95	15.6	S	47.9	.50	13.7	S	U	62.5	2	62.5	2	S-M	100	93	185	S-Q	1
ND 493		59.5	29.8	54	44	2	75.6	1.78	13.3	S	55.7	.40	12.0	S-N	S-Q	59.7	2	59.7	3	M	100 C	92 C	170	S-Q	2
ND 494		60.5	34.8	67	31	2	76.3	1.83	12.5	Q	54.0	.42	10.8	S-N	Q	60.3	2	60.3	2-3/4	M-W	105 BC	90	155	Q	1
ND 495		60.5	41.7	72	27	1	76.6	1.94	15.0	S	52.8	.44	13.4	S-N	Q	64.2	4	64.2	3-1/4	M	92	88 O	160	Q	2
S 6579		60.0	39.5	69	37	4	76.3	1.71	12.8	S-Q	52.1	.49	12.3	N-S	Q	62.3	5	62.3	4-1/4	M	105 C	91	160	Q	2
S 6694		61.0	38.5	63	34	3	76.0	1.85	12.1	Q	53.1	.54	10.9	S-N	U	61.0	4	61.0	4	M	104	92	158	Q-U	1
Wisc. 271		60.0	33.6	49	48	3	75.3	1.72	12.9	S-Q	53.1	.44	11.7	N-S	S	60.7	3	60.7	3-1/4	M	101 C	89 O	175	S	3
Wisc. 678-1-6-9		58.0	35.8	63	35	2	76.1	1.82	13.1	S	51.6	.44	11.9	S-N	U	62.3	4	62.3	3-1/2	S-M	103	91 S10	170	Q	1

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 15

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Bozeman, Montana

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval. 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	63.5	36.6	50	48	2	75.4	1.39	15.1	S	54.2	.37	14.5	N-S	S	63.5	2	63.5	1-3/4	M-S	101 S1C	91 S1I	192	S	
Justin	13462	62.5	35.2	74	26	0	76.7	1.49	15.0	S	54.4	.34	14.1	N-S	S	65.0	3	65.0	2-1/2	M-S	101 C	93	180	S	
Marquis	3641	63.5	33.6	58	40	2	75.8	1.43	15.1	S	52.1	.36	13.9	N-S	Q-S	62.5	2	62.5	1-3/4	M	103 BC	89 OI	185	S	
Neepawa		63.0	32.9	49	50	1	75.4	1.42	15.5	S	52.3	.37	14.5	N-S	S-Q	61.3	1	61.3	1-1/2	W	102 C	85 O	172	U	
Polk	13773	64.5	38.0	70	28	2	76.4	1.40	14.2	S	55.3	.36	13.7	N-S	S	62.8	4	62.8	2-3/4	M-S	100	92 S10I	200	S	
Red River 68	14193	64.5	37.2	44	56	0	75.2	1.35	14.1	S	56.5	.39	13.5	N-S	S	65.7	5	65.7	3-3/4	S1B	99 C	90 O	190	Q-U	
Selkirk	13100	62.0	38.3	64	34	2	76.1	1.40	14.1	S	56.5	.37	13.6	N-S	S	61.9	2	61.9	2	M-W	101	89 O	185	S-Q	
Thatcher	10003	63.5	31.3	42	57	1	75.1	1.39	14.9	S	54.0	.37	13.9	N-S	S-Q	61.9	2	61.9	1-1/2	M-W	103 BC	89 O	194	S-Q	
Waldron	13958	62.5	37.0	79	20	1	76.9	1.47	15.0	S	54.4	.36	13.9	N-S	S-Q	63.2	2	63.2	2	M-S	103 S1C	90 O	196	S	
RL 4220		63.5	34.4	52	47	1	75.6	1.31	13.8	S-Q	54.6	.36	12.7	N-S	S-Q	61.3	2	61.3	2-1/4	W	98	93	163	U	1
II-62-2		62.5	36.0	65	34	1	76.2	1.38	13.7	S-Q	55.8	.38	12.5	N-S	S-Q	62.5	3	62.5	2-3/4	S-M	100 C	91 S10	175	Q	2
II-62-61		64.0	33.3	52	46	2	75.5	1.26	12.2	Q-U	57.7	.38	11.2	N	Q	60.7	3	60.7	2-3/4	M-W	98	92	166	U	1
MT 677		63.0	29.9	21	77	2	74.0	1.33	12.7	U	53.0	.35	11.4	N-S	U	60.3	2	60.3	2	M-W	102 C	91 S10	177	U	1
MT 6723		62.5	30.9	16	82	2	73.7	1.40	13.7	S-Q	54.8	.35	12.5	N-S	S-Q	62.3	2	62.3	2-1/4	S-M	105	86 IO	187	S	2
ND 492		64.0	36.2	66	33	1	76.3	1.50	14.5	S	53.0	.37	13.4	N-S	Q	65.0	4	65.0	2-1/2	M-S	103 W	89 OI	208	S	3
ND 493		62.0	37.6	62	38	0	76.1	1.47	14.1	S	57.1	.32	13.0	S-N	S-Q	62.3	2	62.3	2-1/2	M	100 S1C	92	166	Q	2
ND 494		63.0	38.0	76	22	2	76.7	1.47	14.2	S	54.4	.32	13.1	S-N	Q	62.8	2	62.8	2-1/4	M-W	102 S1C	94	170	Q	2
ND 495		62.0	37.7	70	28	2	76.4	1.56	15.0	S	53.2	.35	13.7	N-S	Q	63.2	3	63.2	2-1/2	M-W	103 BC	92 S10	168	Q	2
S 6579		64.0	41.8	77	22	1	76.8	1.30	13.9	S	56.7	.37	13.3	N-S	S	62.8	2	62.8	2-1/2	M	100 S1C	91 S10	173	S-Q	3
S 6694		64.0	39.4	70	28	2	76.4	1.36	14.0	S	56.4	.40	13.2	N-S	S	63.8	3	63.8	2-3/4	S-M	102	94 S10	186	S	3
Wisc. 271		64.0	34.6	34	64	2	74.6	1.27	13.1	Q	56.0	.36	12.1	N-S	Q	61.3	3	61.3	3-1/2	M	100 S1C	91 S10	178	Q	2
Wisc. 678-1-6-9		64.0	36.2	59	40	1	75.9	1.42	13.6	Q-S	54.6	.34	12.6	N-S	Q	62.5	3	62.5	3	S-M	104 BC	91 S10	187	S	3

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
Refer to Reference Mixograms for numerical curve pattern.
B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
- Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 16

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Havre, Montana

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	63.0	32.7	40	59	1	75.0	1.59	16.4	S	54.7	.43	15.8	N	S	65.7	3	65.7	2	S	101 S1C	92 S1I	191	S	
Justin	13462	62.5	35.7	47	51	2	75.3	1.72	17.2	S	54.9	.41	16.3	N-S	S	68.2	4	68.2	2-3/4	S	102	85 IO	195	S	
Marquis	3461	63.0	33.4	51	48	1	75.5	1.64	15.6	S-Q	52.8	.46	15.3	N-S	Q-S	64.2	3	64.2	2	S-M	102	91 I	198	S	
Neepawa		62.4	33.4	52	47	1	75.6	1.65	16.2	S	51.6	.47	15.3	N-S	Q	62.8	2	62.8	1-1/2	M	101 C	89	184	Q	
Polk	13773	64.0	38.5	70	29	1	76.5	1.69	15.9	S	55.6	.47	15.0	N-S	S	64.2	3	64.2	2-3/4	S-M	101 S1C	95	219	S	
Red River 68	14193	64.0	37.6	40	59	1	75.0	1.73	16.0	S	54.2	.50	15.5	N-S	Q-S	68.2	5	68.2	3-1/2	S	103	92 O	229	S	
Selkirk	13100	62.0	37.5	56	43	1	75.8	1.75	16.2	S	57.9	.46	15.6	N-S	S	64.7	3	64.7	1-3/4	S-M	100	96	195	S	
Thatcher	10003	63.5	37.8	46	53	1	75.3	1.64	16.3	S	54.0	.47	15.0	N-S	S-Q	61.9	2	61.9	1-3/4	M-S	101 S1C	92 I	200	Q	
Waldron	13958	62.5	36.5	70	29	1	76.5	1.70	16.9	S	52.8	.45	15.7	N-S	Q	64.7	2	64.7	2	M-S	98	88 O	221	S	
RL 4220		62.5	36.2	57	43	0	75.9	1.66	16.1	S	52.8	.47	14.6	N-S	Q	63.2	2	63.2	2	M-S	100	91 O	200	S-Q	2
II-62-2		63.0	40.2	79	20	1	76.9	1.62	15.9	S	53.5	.44	14.5	N-S	Q	61.0	2	61.0	2	M-S	105 S1C	88	160	Q-U	1
II-62-61		65.5	36.9	75	24	1	76.7	1.49	14.7	S	56.5	.42	13.3	N	S-Q	59.7	2	59.7	2	M-S	101 S1C	96	187	Q-U	1
MT 677		62.5	31.6	37	62	1	74.8	1.67	15.9	S	50.5	.47	14.9	S-N	U	62.5	2	62.5	2	M-S	100	95	198	Q	1
MT 6723		62.0	33.4	43	56	1	75.1	1.64	16.0	S	50.7	.43	15.3	S-N	U	62.8	2	62.8	2	S	101	86 O	210	S	1
ND 492		63.0	37.5	68	31	1	76.4	1.76	15.9	S	51.9	.46	14.9	N-S	Q	63.2	3	63.2	2-1/2	M-S	100 W	93	236	S	2
ND 493		62.5	40.2	64	36	0	76.2	1.89	16.2	S	55.1	.37	15.5	S-N	VS	62.8	2	62.8	2-1/4	S-M	102 S1C	89	194	S-Q	2
ND 494		63.0	43.1	81	18	1	77.0	1.85	16.2	S	53.7	.40	15.3	S-N	S	63.8	2	63.8	2	M-S	104	90	186	S-Q	2
ND 495		62.5	40.2	74	25	1	76.7	1.93	16.9	S	52.1	.40	15.9	N	S	64.2	3	64.2	2-1/4	S-M	100	87 O	221	S	3
S 6579		63.5	43.3	79	21	0	77.0	1.58	16.1	S	55.6	.42	15.6	N-S	S	64.7	4	64.7	2-3/4	S	101	89 O	201	S	3
S 6694		62.5	41.2	76	24	0	76.8	1.61	15.9	S	54.7	.46	15.6	S-N	S	67.9	5	67.9	3-1/2	S	100	87 I	220	S	3
Wisc. 271		63.5	36.1	47	52	1	75.3	1.71	15.8	S	55.1	.46	14.7	N-S	S	63.5	3	63.5	3	S	100 C	92 S1O	212	S-Q	3
Wisc. 678-1-6-9		63.2	37.7	60	39	1	76.0	1.76	16.1	S	54.2	.42	15.0	N-S	S	67.3	5	67.3	3-3/4	S	101 S1C	91 I	233	S	3

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 17

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Sidney, Montana

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen Eva 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	61.0	26.8	10	84	6	73.2	1.75	14.1	S	57.5	.48	13.8	N	S	62.3	3	62.3	2-3/4	M-S	97	92 S1O	173	S-Q	
Justin	13462	55.0	25.9	10	81	9	73.1	1.97	15.9	S-Q	55.5	.51	15.6	N	S	68.5	6	68.5	5-1/2	S	98 C	90 O	206	S	
Marquis	3461	61.0	28.7	17	76	7	73.6	1.87	12.5	Q	55.2	.56	12.0	N	S-Q	60.0	3	60.0	3-1/4	M	99 S1C	85 C	155	Q	
Neepawa		60.5	28.7	15	80	5	73.5	1.67	14.6	S	55.4	.50	14.3	N	S	63.2	3	63.2	2-1/2	S	95 C	90 O	193	S-Q	
Polk	13773	61.5	35.2	37	57	6	74.6	1.79	13.7	S	57.3	.49	13.0	N	S	62.5	3	62.5	3-1/2	S-M	100 S1C	93 S1O	193	S-Q	
Red River 68	14193	60.0	28.5	4	86	10	72.7	1.92	14.3	S	55.0	.58	13.8	N	S-Q	60.3	6	60.3	5-1/2	S	100 C	89 O	190	Q-U	
Selkirk	13100	54.5	28.9	17	74	9	73.4	2.09	14.3	S-Q	55.5	.57	13.8	N	S-Q	64.2	3	64.2	3	M-S	98 C	85 OS1H	167	S-Q	
Thatcher	10003	60.0	27.9	11	82	7	73.2	1.73	14.0	S	55.9	.52	13.5	N	S	62.3	3	62.3	3	S-M	102 C	85 O	183	S-Q	
Waldron	13958	59.5	35.6	49	46	5	75.2	1.85	15.2	S	55.7	.50	14.4	N	S	64.2	3	64.2	2-1/2	S	96 C	88 O	193	S-Q	
RL 4220		60.0	28.5	17	76	7	73.5	1.69	12.8	S-Q	56.4	.51	12.1	N	S	62.3	3	62.3	3	S-M	100	91	165	S-Q	
II-62-2		61.5	34.2	47	48	5	75.1	1.66	13.4	S	55.9	.48	12.5	N	S-Q	62.5	3	62.5	3-1/4	S	100 C	85 OI	175	S-Q	3
II-62-61		62.0	30.1	23	70	7	73.8	1.73	11.8	Q	57.0	.51	11.0	N	Q	59.0	4	59.0	3-3/4	M-S	102	85 S1OH	166	U	1
MT 677		58.5	24.6	4	83	13	72.6	1.79	12.4	Q	53.6	.52	11.6	N-S	Q	59.7	3	59.7	3-1/2	M-S	99 C	91	168	Q-U	1
MT 6723		57.5	22.8	3	84	13	72.5	1.79	12.7	Q	53.3	.50	12.0	S-N	Q-U	60.0	3	60.0	3-1/2	M	103	93 S1O	176	Q	1
ND 492		61.5	30.8	35	58	7	74.4	1.81	13.7	S	53.1	.48	12.8	N-S	Q	63.2	3	63.2	2-3/4	S-M	103	88 O	202	S	3
ND 493		56.0	29.2	10	78	12	72.9	1.95	14.4	S	57.1	.45	13.7	N	S	62.5	3	62.5	4	S-M	102 C	85 OS1H	171	S-Q	3
ND 494		52.0	25.7	8	76	16	72.6	2.08	15.0	Q	51.2	.57	14.5	S	U	67.9	5	67.9	3-3/4	S-M	103 BC	93 S1O	188	S	1
ND 495		52.5	25.8	7	76	17	72.5	2.15	16.0	U	50.9	.51	15.6	S	U	67.9	5	67.9	4-3/4	S	98	88 IO	214	S	1
S 6579		58.0	30.9	18	73	9	73.5	1.82	13.8	S	54.0	.47	13.7	N-S	Q-S	62.8	4	62.8	4	M-S	104 C	95	189	S-Q	3
S 6694		58.5	29.4	13	77	10	73.2	1.92	13.2	Q-S	53.5	.57	13.0	N	Q	61.9	4	61.9	3-3/4	S-M	102 C	94	180	Q	2
Wisc. 271		55.5	27.6	5	77	18	72.4	1.91	14.8	S	52.6	.52	14.2	S-N	Q	66.3	7	66.3	6-1/2	S-M	93 BC	92 S1O	183	Q	2
Wisc. 678-1-6-9		51.5	28.0	10	73	17	72.7	2.10	15.5	Q	49.1	.56	15.2	S	U	69.1	8	69.1	8-1/2	VS	101 C	85 OI	205	U	1

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I -Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 18

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Carrington, North Dakota

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
														IRRIGATED											
Chris	13751	60.5	25.6	28	66	6	74.1	1.81	15.4	S	56.2	.46	14.9	N-S	S	64.4	4	64.4	3	S	102 C	88 O	208	S	
Justin	13462	59.0	27.8	40	58	2	74.9	1.93	16.1	S	55.0	.47	15.6	N-S	S	67.3	7	67.3	5-1/4	S	100 C	90 O S1T	200	S	
Marquis	3461	59.0	25.2	11	86	3	73.4	1.96	13.5	Q	53.6	.55	12.7	N-S	Q	63.8	5	63.8	4	M	100 C	92 T	183	Q	
Neepawa		61.5	28.2	44	54	2	75.1	1.78	14.9	S	54.8	.46	14.3	N-S	S	64.7	4	64.7	2-3/4	S-M	100 C	88 O	210	S	
Polk	13773	63.5	37.3	58	41	1	75.9	1.75	13.5	S	57.1	.44	12.9	N-S	S	62.5	3	62.5	3-1/2	M-S	103 S1C	90 S1I	210	S	
Red River 68	14193	62.5	30.9	20	76	4	73.8	1.70	13.5	S	55.2	.51	13.1	N-S	S-Q	67.3	9	67.3	8-1/4	B	101 C	90 O	182	U	
Selkirk	13100	60.0	29.6	42	52	6	74.8	1.86	14.2	S	56.9	.49	13.8	N-S	S	62.8	4	62.8	3-1/4	M	100 C	90 S1T	181	Q	
Thatcher	10003	59.5	22.9	2	92	6	72.8	1.74	13.4	Q	55.7	.50	12.7	N-S	S	60.7	4	60.7	3	M-S	102 C	90 S1OT	187	Q	
Waldron	13958	60.0	33.8	43	53	4	75.0	1.78	14.4	S	56.2	.48	13.5	N-S	S	64.7	5	64.7	4	S-M	100 S1C	90 OS1T	196	S	
RL 4220		61.0	33.1	43	53	4	75.0	1.77	14.1	S	55.7	.48	13.4	N-S	S	62.5	4	62.5	3-3/4	S-M	102	91 O	190	S-Q	3
II-62-2		63.0	37.2	56	41	3	75.7	1.59	13.4	Q	56.5	.42	12.3	N-S	S-Q	61.3	4	61.3	4	M-S	101 S1C	95 S1T	185	Q	2
II-62-61		64.0	30.8	43	54	3	75.0	1.59	11.2	U	57.6	.49	10.4	N-S	Q	59.0	3	59.0	3-1/2	W	98	95 S1T	190	U	1
MT 677		55.5	15.3	1	84	15	72.3	1.99	13.5	Q	51.0	.56	12.6	S-N	U	61.0	5	61.0	4-1/4	S-M	99	92	193	Q	1
MT 6723		57.0	25.4	3	89	8	72.8	1.81	11.6	U	52.2	.52	11.0	S-N	U	57.2	2	57.2	2-1/2	M	100 S1C	94	177	U	1
ND 492		60.5	28.4	36	60	4	74.6	1.94	14.5	S	51.7	.52	13.5	N-S	Q	62.8	4	62.8	3-3/4	M-S	102 W	91 OS1I	215	S	2
ND 493		60.5	34.4	60	40	0	76.0	1.69	13.9	S	58.4	.36	13.2	N-S	S	61.6	6	61.6	5-1/2	S	101	93	179	Q	2
ND 494		61.0	31.2	61	39	0	76.1	1.82	13.7	S	54.1	.43	12.7	S-N	Q	62.5	4	62.5	4	M-S	101 S1C	91 OS1I	192	Q-S	2
ND 495		61.0	32.1	58	41	1	75.9	1.79	14.4	S	54.5	.41	13.7	N-S	S-Q	62.8	6	62.8	5-1/4	S-M	99	91 O	189	S	3
S 6579		61.0	33.6	51	48	1	75.5	1.62	13.7	S-Q	53.1	.44	13.3	N-S	Q	60.0	5	60.0	4-1/2	M-S	102 C	92	182	Q	1
S 6694		60.5	32.4	38	58	4	74.7	1.83	14.4	S	54.8	.53	14.1	N-S	Q	61.9	6	61.9	5	S-M	102	85 OI	203	Q	2
Wisc. 271		60.5	28.4	26	74	0	74.3	1.70	13.7	Q	54.8	.43	13.1	N-S	Q	61.9	7	61.9	6	S-M	102 S1C	92 S10	191	Q	2
Wisc. 678-1-6-9		60.5	30.1	38	58	4	74.7	1.83	13.8	S	53.1	.43	13.4	S-N	Q	62.8	10	62.8	8	S	100 S1C	88 O	208	S-Q	2

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 19

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Dickinson, North Dakota

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	63.0	30.3	33	63	4	74.5	1.63	16.0	S	54.7	.43	15.9	N-S	S	64.4	3	64.4	2-1/2	S	103 S1C	88 IO	220	S	
Justin	13462	61.5	29.2	33	62	5	74.4	1.81	15.6	S	54.2	.43	15.2	N-S	S	65.0	5	65.0	4-1/4	S	99	88 0	204	S	
Marquis	3461	60.0	30.5	29	66	5	74.2	1.87	13.9	S	55.2	.49	13.5	N-S	S	62.5	3	62.5	2-3/4	M	97	90 0	188	S	
Neepawa		62.0	29.2	37	60	3	74.7	1.69	16.0	S	52.6	.44	15.3	N-S	Q-S	63.2	2	63.2	1-3/4	M-S	100 S1C	89 0	194	Q	
Polk	13773	63.0	33.7	49	47	4	75.3	1.63	14.9	S	53.5	.45	14.2	N-S	S	63.5	4	63.5	3-1/4	M-S	100	92 0	218	S	
Red River 68	14193	62.5	28.0	9	84	7	73.0	1.70	14.4	Q-S	53.0	.52	14.0	S-N	Q	67.9	7	67.9	7	B	97 OC	83 0	188	U	
Selkirk	13100	61.0	28.1	25	72	3	74.1	1.72	14.5	S-Q	54.0	.49	14.0	N-S	S	62.5	5	62.5	4-1/2	S-M	99	89	195	S	
Thatcher	10003	62.0	26.5	13	82	5	73.4	1.80	14.4	Q-S	54.7	.47	13.8	N-S	S	61.9	3	61.9	2-3/4	S-M	100	94	190	S	
Waldron	13958	61.0	36.2	73	34	3	76.5	1.84	17.3	VS	51.2	.46	16.4	N-S	Q	65.7	3	65.7	2-3/4	M-S	80 G	86 0	214	S	
RL 4220		62.5	29.8	37	59	4	74.7	1.62	14.5	S-Q	56.3	.45	13.9	N	S	63.5	3	63.5	3	S	102	86 0	203	S	3
II-62-2		60.5	29.8	50	45	5	75.3	1.65	15.1	S	55.2	.46	14.1	N-S	S	62.5	3	62.5	2-3/4	S	103 CB	91 0	193	S	3
II-62-61		63.0	28.0	33	60	7	74.3	1.54	13.6	Q	57.9	.44	12.7	N	S	59.7	2	59.7	2-1/2	M-W	102 BC	94	190	U	1
MT 677		61.5	24.9	7	84	9	72.9	1.68	14.0	Q-U	52.6	.46	13.0	S-N	Q	61.3	3	61.3	3	S-M	101 S1C	92 S10	182	Q	1
MT 6723		59.0	23.8	5	84	11	72.7	1.76	14.2	Q	51.9	.49	13.3	S-N	Q	61.9	4	61.9	3	S-M	101	87 0	205	Q	1
ND 492		61.0	29.7	47	48	5	75.1	1.82	14.9	S	50.5	.48	14.0	S	Q	65.7	4	65.7	3	S-M	104	92	218	S	2
ND 493		60.5	33.7	50	44	6	75.2	1.71	14.6	S	57.0	.37	13.9	N-S	VS	65.0	5	64.0	5-1/4	S-M	100	93	174	Q	2
ND 494		61.5	31.9	49	41	10	75.0	1.83	14.8	S	53.5	.43	13.9	S-N	Q	64.7	4	64.7	2-3/4	M	104 C	92 0	187	S-Q	3
ND 495		61.5	33.9	60	37	3	75.9	1.84	15.7	S	53.5	.41	15.0	N-S	S-Q	65.7	5	65.7	3-1/2	S-M	102 S1C	90 0	185	S	3
S 6579		60.5	34.1	46	50	4	75.1	1.63	15.1	S	54.7	.45	15.0	N-S	S	65.0	4	65.0	4	S-M	106 S1C	92 S1I	197	S	3
S 6694		61.0	32.3	23	71	6	75.9	1.71	14.4	S	53.8	.51	14.1	N-S	Q	65.0	5	65.0	5	M-S	103 S1C	93 0	194	S	3
Wisc. 271		62.0	36.6	41	55	4	74.9	1.66	15.1	S	57.6	.43	14.5	N-S	S	67.0	5	67.0	4-1/4	S-M	105 C	91 0	186	S	3
Wisc. 678-1-6-9		62.5	38.6	49	47	4	75.3	1.65	14.9	S	54.7	.42	14.6	N-S	S	67.0	5	66.0	4-1/2	S	101	85 0	216	S	3

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 20

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Fargo, North Dakota

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval. 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	62.0	28.4	4	94	2	73.1	1.71	16.0	S-Q	55.2	.43	15.4	N	S	62.5	3	62.5	3	S-M	100	89 O	191	S	
Justin	13462	61.0	32.6	24	74	2	74.1	1.81	15.9	S	55.5	.44	15.4	N	S	66.3	7	66.3	5	S	97	80 O	196	S	
Marquis	3461	61.0	26.0	2	94	4	72.9	1.93	14.6	S-Q	54.7	.49	13.8	S	S-Q	61.9	3	61.9	2-1/4	M-W	100 C	90 OH	180	U	
Neepawa		62.0	36.9	38	61	1	74.9	1.77	15.9	S	53.6	.47	15.1	N	Q-S	63.2	3	63.2	2-1/4	M	98 C	85 IO	187	Q	
Polk	13773	64.0	34.2	38	62	0	74.9	1.73	14.8	S	55.2	.45	14.0	N	S	62.3	5	62.3	4	M-S	98	95	212	S	
Red River 68	14193	63.0	35.2	9	90	1	73.5	1.73	14.4	S	55.2	.48	13.8	N	S	66.6	10	66.6	10-1/2	S	100	80 IO	176	U	
Selkirk	13100	59.0	32.6	10	86	4	73.4	1.90	15.1	S	56.6	.50	14.5	N	S	62.3	3	62.3	3-1/4	M	99	89 H	163	S-Q	
Thatcher	10003	58.0	23.2	1	90	9	72.7	1.93	14.4	S-Q	55.5	.53	13.9	N	S-Q	61.9	5	61.9	3-3/4	M	101 C	90 H	178	Q-S	
Waldron	13958	61.0	38.8	55	42	3	75.6	1.83	15.0	S	54.5	.45	14.1	N	S	62.8	5	62.8	3-1/2	S	100 C	93	192	S	
RL 4220		62.0	43.1	28	71	1	74.4	1.72	14.3	S-Q	55.9	.45	13.6	N	S	62.3	5	62.3	4-1/4	S-M	100	87	180	S	3
II-62-2		62.0	47.6	56	42	2	75.7	1.67	13.9	S-Q	58.0	.43	12.8	N	S	61.9	5	61.9	4-3/4	S-M	98 C	88	183	S-Q	3
II-62-61		61.0	38.3	13	84	3	73.5	1.78	13.8	Q	58.2	.48	12.8	N	S-Q	61.6	5	61.6	5	M	101 C	87	174	Q	2
MT 677		58.0	28.7	11	87	2	73.0	1.83	13.3	Q	53.5	.52	12.3	N-S	Q	60.7	5	60.7	4-1/4	S-M	92	89 H	173	Q-U	1
MT 6723		57.0	22.7	1	84	15	72.8	1.97	13.5	Q	53.8	.52	12.5	N-S	Q	61.6	4	61.6	4-1/4	M-S	97 BC	93	188	Q	1
ND 492		63.0	37.2	46	53	1	75.3	1.79	15.0	S	52.8	.44	13.6	N	Q	63.5	5	63.5	4	S-M	105 W	80 O	213	S	3
ND 493		62.0	39.4	56	44	0	75.8	1.65	14.0	S-Q	58.7	.35	13.3	N-S	S	62.5	6	62.5	6	S-M	103	89	176	S-Q	3
ND 494		61.0	37.5	66	34	0	76.3	1.72	14.4	S-Q	55.4	.40	13.5	N-S	S	64.2	5	64.2	4-3/4	S	102	92	184	S	3
ND 495		61.0	36.5	50	49	1	75.5	1.76	15.1	S	54.9	.40	14.2	N-S	S	64.2	8	64.2	7	S	95	92 O	183	Q	2
S 6579		62.0	34.6	54	45	1	75.7	1.66	15.6	S	54.9	.43	14.0	N	S	62.8	6	62.8	4-3/4	S-M	98 C	85 O	182	S	3
S 6694		62.0	35.5	38	61	1	74.9	1.79	14.0	S	56.1	.50	14.2	N	S	63.2	6	63.2	5	S-M	101	85 I	201	S	3
Wisc. 271		63.0	30.7	25	73	2	74.2	1.60	14.2	S-Q	57.8	.40	13.4	N	S	62.5	8	62.5	7-1/4	S-M	93	92	187	Q	2
Wisc. 678-1-6-9		62.0	33.0	39	60	1	74.9	1.69	14.1	S-Q	56.4	.41	13.3	N-S	S	64.2	7	64.2	8-1/4	S	100 SlC	85 O	194	Q	2

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 21

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Langdon, North Dakota

1969 CRO

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen Eva 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	64.0	35.5	44	54	2	75.1	1.59	13.7	S	55.1	.45	13.2	N	S	62.5	3	62.5	2-3/4	M-S	101 C	93	173	S	
Justin	13462	63.0	34.5	65	34	1	76.2	1.69	13.4	S	48.1	.44	12.8	N	S-Q	61.9	6	61.9	5	M-S	103 S1C	85 O	176	S	
Marquis	3461	63.0	32.2	40	57	3	74.9	1.70	12.6	S	54.0	.47	11.9	N-S	S-Q	59.3	2	59.3	2	M-W	104 S1C	90 S1H	168	Q	
Neepawa		63.0	36.1	61	38	1	76.0	1.65	12.4	S	50.5	.47	11.7	N-S	S-Q	59.0	3	59.0	2-1/2	M	101 C	91	153	Q	
Polk	13773	64.0	35.5	59	38	3	75.8	1.62	12.6	S	54.8	.46	12.2	N	S	61.3	5	61.3	5-1/4	S-M	102	94	178	S	
Red River 68	14193	64.0	34.5	40	60	0	75.0	1.63	12.7	S	54.0	.49	12.2	N-S	S-Q	62.5	7	62.5	5-3/4	S	100 C	85 OI	180	S	
Selkirk	13100	63.0	34.0	60	38	2	75.9	1.64	12.1	S	54.5	.50	11.4	N	S	58.3	2	58.3	2-1/2	W	100	80 H	152	Q	
Thatcher	10003	64.0	27.2	9	90	1	73.4	1.60	12.1	Q-S	54.0	.50	11.4	N	S	57.5	4	57.5	3-1/2	M	101 S1C	90	160	Q	
Waldron	13958	60.0	34.4	54	40	6	73.4	1.84	15.2	S	54.9	.45	14.0	N-S	S	62.5	5	62.5	4	S-M	102 S1C	89 O	192	S	
RL 4220		63.0	35.8	60	38	2	75.9	1.67	11.8	S-Q	55.5	.46	10.7	N-S	S-Q	59.0	4	59.0	3-1/2	M	103	93	158	S-Q	2
II-62-2		63.0	35.1	63	36	1	76.1	1.63	12.4	S	53.8	.46	11.4	N-S	S	59.7	3	59.7	3	S-M	98 C	89	170	S	3
II-62-61		64.0	30.1	38	61	1	74.9	1.62	11.3	S	54.8	.48	10.2	N-S	S	57.2	4	57.2	4	M	102 C	89 S1O	161	Q	2
MT 677		62.0	29.8	18	78	4	73.7	1.63	10.8	Q	51.4	.47	9.5	S-N	Q	55.1	4	55.1	3-1/2	M	104 S1C	92	147	U	1
MT 6723		62.0	29.3	21	76	3	73.9	1.66	11.6	S-Q	52.1	.49	10.6	S-N	Q-S	58.3	3	58.3	3	M	100	93	155	S-Q	2
ND 492		63.0	38.5	64	34	2	76.1	1.65	13.1	S	51.4	.47	12.2	N-S	S-Q	61.9	3	61.9	3-1/4	S-M	101	88 O	187	S	3
ND 493		62.0	35.8	64	35	1	76.2	1.57	14.8	S	56.4	.38	10.9	S-N	S-Q	58.3	6	58.3	5	M S1D	102 C	87 C	144	Q	1
ND 494		63.0	37.9	66	33	1	76.3	1.75	12.3	S	54.0	.44	11.4	N-S	S	60.7	2	60.7	2-1/2	M	102 S1C	94	160	S	3
ND 495		62.5	40.3	73	26	1	76.6	1.73	13.4	S	52.8	.43	12.6	N-S	S	61.9	4	61.9	3-1/2	M	100 C	90	156	S	4
S 6579		64.0	34.6	70	29	1	76.5	1.51	12.7	S	54.0	.45	12.5	N-S	S	60.3	5	60.3	4-1/2	M	102 S1C	92	162	S	4
S 6694		64.0	41.7	76	23	1	76.8	1.61	12.0	S	52.8	.52	11.7	N-S	Q-S	59.0	6	59.0	4-3/4	M	101	89 H	162	S	3
Wisc. 271		64.0	36.4	58	41	1	75.9	1.58	11.7	S-Q	57.5	.45	10.9	N-S	S	58.1	6	58.1	4-1/2	M	101 S1C	89	154	S-Q	3
Wisc. 678-1-6-9		63.5	34.4	68	31	1	76.4	1.62	12.2	S	56.6	.43	11.6	N-S	VS	60.7	3	60.7	3-3/4	S-M	101 S1C	90	164	S	4

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 22

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Minot, North Dakota

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	63.5	31.8	52	46	2	75.5	1.58	15.6	S	56.1	.42	15.1	N-S	S	63.5	3	63.5	3	S	103	85 OI	200	S	
Justin	13462	62.5	37.0	59	40	1	75.9	1.69	15.2	S	55.5	.42	14.7	N	S	64.2	5	64.2	3-3/4	S	101	90 O	194	S	
Marquis	3461	64.0	32.2	32	65	3	74.5	1.50	13.7	S-Q	55.7	.41	13.1	N	S	60.3	2	60.3	1-1/2	M-W	102 S1C	94	177	Q	
Neepawa		63.0	36.1	61	39	0	76.1	1.65	15.7	S	54.0	.44	15.3	N	S	61.9	2	61.9	1-3/4	S-M	100 C	91 O	180	U	
Polk	13773	64.5	33.7	69	31	0	76.5	1.59	14.4	S	56.1	.43	13.8	N	S	62.3	4	62.3	3-3/4	S	102	92 I	197	S	
Red River 68	14193	63.5	33.1	18	78	4	73.7	1.68	14.1	S-Q	53.8	.51	13.7	N-S	Q	67.0	9	66.0	9-3/4	S1B	100 C	91 IO	172	U	
Selkirk	13100	61.0	36.4	46	51	3	75.2	1.73	14.1	S	57.8	.46	13.8	N	S	61.9	3	61.9	2-3/4	M-W	100 VC	94	175	S-Q	
Thatcher	10003	61.5	25.9	18	76	6	73.6	1.61	13.7	S-Q	56.6	.49	13.2	N	S	60.7	3	60.7	3	M	102	95	185	S-Q	
Waldron	13958	60.5	35.0	57	40	3	75.7	1.77	15.0	S	56.8	.45	14.0	N	S	61.9	4	61.9	3-1/2	M	101 S1C	96	182	S	
RL 4220		63.0	35.1	58	42	0	75.9	1.49	13.8	S	56.8	.41	13.3	N	S	61.6	3	61.6	2-1/2	S-M	100	92 O	182	S-Q	3
II-62-2		62.5	41.5	73	26	1	76.6	1.49	14.5	S	55.9	.42	13.5	N-S	S	61.9	3	60.9	3-1/2	S-M	102 C	88	170	Q	2
II-62-61		64.0	31.0	58	40	2	75.8	1.44	12.6	Q	56.8	.44	11.9	N-S	S	59.7	4	59.7	3-1/4	M	100	96	172	Q	2
MT 677		60.0	21.8	2	86	12	72.5	1.67	13.2	Q	52.1	.48	12.4	S-N	U	59.3	3	59.3	3-1/2	S-M	98 OC	96	180	Q	1
MT 6723		60.0	27.2	6	86	8	72.9	1.67	12.9	Q	52.8	.50	12.3	S-N	S	59.3	2	59.3	2-3/4	M	101	94 S1O	194	Q	1
ND 492		63.5	38.2	65	34	1	76.2	1.67	14.5	S	51.4	.46	13.5	S-N	Q	68.2	5	67.2	3-1/2	S-M	102	93 O	202	S	3
ND 493		61.0	33.9	53	46	1	75.6	1.88	14.3	S	57.8	.37	13.9	S-N	S	66.3	7	65.3	7-1/2	S	98 CD	80 IO	165	Q	1
ND 494		62.5	42.6	66	32	2	76.2	1.65	14.1	S	54.9	.42	13.8	S-N	Q	67.9	6	67.9	4-3/4	S-M	100	94 S1O	185	S	3
ND 495		61.5	35.3	58	41	1	75.9	1.78	15.4	S	54.5	.40	15.1	S-N	Q	67.9	7	67.9	5-1/4	S-M	99 C	94	187	S	3
S 6579		63.0	26.1	67	33	0	76.4	1.60	14.3	Q	55.9	.41	14.0	S-N	S	63.2	5	63.2	4	S	102 BC	96	194	S	3
S 6694		63.5	34.4	60	38	2	75.9	1.58	13.7	S-Q	55.7	.48	13.4	N	S-Q	63.8	5	63.8	4	S-M	101	95 S1I	182	S	3
Wisc. 271		64.0	35.6	50	49	1	76.5	1.64	14.5	S	56.6	.41	13.9	N-S	S	63.5	5	63.5	4-3/4	S-M	102	80 IO	198	S	3
Wisc. 678-1-6-9		62.5	38.5	55	44	1	76.7	1.66	14.5	S	55.5	.42	14.1	N	S	65.0	5	65.0	5-1/2	VS	99 C	92	195	Q	2

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 23

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Williston, North Dakota

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval. 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	63.5	29.5	39	59	2	74.9	1.66	15.5	S	57.4	.43	15.0	N	S	63.8	3	63.8	2-1/4	S-M	103	85 OI	206	S	
Justin	13462	62.0	30.1	37	60	3	74.9	1.78	15.1	S	57.6	.43	14.5	N	S	64.2	4	64.2	4	S-M	99	80 O	200	S	
Marquis	3461	62.0	28.2	34	63	3	74.5	1.75	14.9	S	56.4	.46	14.3	N-S	S-Q	63.2	3	63.2	2-3/4	S-M	97	88 O	202	S	
Neepawa		63.5	33.2	38	60	2	74.8	1.76	15.9	S	55.0	.47	15.1	N	Q-S	62.3	2	62.3	1-3/4	M	102 C	90 O	186	Q	
Polk	13773	63.0	37.5	44	53	3	75.1	1.67	14.8	S	57.1	.44	14.0	N	S	63.5	4	63.5	3-1/2	M-S	101	75 O	230	Q-S	
Red River 68	14193	63.0	26.4	11	85	4	73.4	1.71	14.5	S-Q	55.5	.48	13.9	N	Q-S	67.9	7	67.9	7-1/4	S1B	96	80 O	190	U	
Selkirk	13100	61.5	30.4	44	53	3	75.1	1.74	15.1	S	59.0	.44	14.5	N	S	62.8	3	62.8	2-3/4	M-S	101 S1C	80 OH	175	Q-S	
Thatcher	10003	63.0	26.9	28	68	4	74.2	1.71	15.0	S-Q	57.5	.46	14.4	N	S-Q	61.9	2	61.9	2	M	104 BC	82 O	191	Q-S	
Waldron	13958	60.5	39.5	63	35	2	76.1	1.98	17.8	S	51.9	.49	16.7	S-N	Q	67.0	4	66.0	2-1/4	M-S	80 G	75 O	231	Q	
RL 4220		62.5	29.8	38	59	3	74.8	1.68	14.5	S-Q	56.9	.47	13.7	N	S-Q	61.9	2	61.9	2-1/2	M	106 C	91 S1O	185	S-Q	2
II-62-2		62.0	32.5	23	74	3	74.0	1.72	14.8	Q-S	56.1	.46	13.8	N	S	63.5	3	63.5	3-1/4	S-M	104 C	91 S1O	200	S	3
II-62-61		63.0	29.5	37	59	4	74.7	1.62	13.5	Q	57.1	.45	12.8	N	S	60.7	3	60.7	3	S-M	102 C	92	192	Q	2
MT 677		62.0	27.1	17	79	4	73.7	1.70	14.3	Q	53.6	.47	13.3	S-N	Q	61.3	3	61.3	2-3/4	M	101 C	88 O	174	U	1
MT 6723		61.5	26.3	12	85	3	73.5	1.74	14.8	Q	54.0	.45	13.9	S-N	Q	62.3	3	62.3	2-3/4	M-S	101	93 S1O	195	S-Q	1
ND 492		62.0	30.6	43	56	1	75.1	1.86	14.7	S	52.6	.46	14.2	N	Q-U	62.8	3	62.8	3	M-S	100	94 S1O	218	S	2
ND 493		62.0	33.9	47	50	3	75.2	1.78	15.1	S	58.5	.36	14.4	N	VS	62.8	3	62.8	3-3/4	M-S	101 S1C	89	180	S	3
ND 494		62.0	32.6	39	58	3	74.8	1.87	15.0	S	56.1	.42	14.1	N	S	62.8	3	62.8	2-3/4	M-S	105 C	95 S1O	190	S	3
ND 495		61.5	35.2	49	49	2	77.4	1.76	15.7	S	55.5	.41	14.1	N	S	66.6	5	66.6	4-1/2	VS	100 C	91 S1O	197	S-Q	3
S 6579		62.5	34.2	44	54	2	75.1	1.63	15.0	S	56.2	.43	14.6	N-S	S	62.8	4	62.8	4	S-M	104 C	87 O	192	S	3
S 6694		63.0	32.3	31	66	3	74.4	1.79	14.4	S-Q	55.5	.51	13.9	N	Q	62.3	5	62.3	4	S-M	101	94 S1O	190	S-Q	2
Wisc. 271		62.5	29.9	22	74	4	73.9	1.77	14.7	S-Q	56.7	.42	14.1	N-S	S-Q	62.5	4	62.5	4	S	104 C	90 O	194	S-Q	3
Wisc. 678-1-6-9		62.5	31.2	42	56	2	75.0	1.74	14.6	S-Q	55.4	.42	14.0	N-S	Q	65.7	6	65.7	4-3/4	VS	105 S1C	91 O	199	Q-S	2

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 24

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Highmore, South Dakota

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval. 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	61.0	27.2	6	91	3	73.2	1.79	17.1	S	60.1	.41	16.4	N	S	68.8	6	68.8	4-1/2	S	100 S1C	85 OI	221	S	
Justin	13462	59.0	28.2	11	84	5	73.3	1.92	17.0	S	59.3	.44	16.9	N	S	69.1	8	69.1	8-3/4	S	99 C	85 O	210	S	
Marquis	3461	58.0	22.8	2	90	8	72.7	1.90	13.9	Q	55.4	.51	13.3	N	U-Q	61.6	5	61.6	4	S-M	100	92 S10	187	Q	
Neepawa		59.0	26.2	6	88	6	73.0	1.75	16.9	S	59.0	.45	16.6	N	S	65.3	4	65.3	4	S	97	85 OI	215	S	
Polk	13773	61.5	32.8	28	68	4	74.2	1.80	15.6	S-Q	57.9	.44	14.6	N	Q-S	64.2	5	64.2	5-1/2	S-M	100 S1C	90 S10	217	S	
Red River 68	14193	61.0	27.3	2	92	6	72.8	1.83	15.9	Q-S	58.0	.51	15.3	N	Q	68.8	11	68.8	17-1/2	B	95	90 S10	190	U	
Selkirk	13100	57.5	29.8	19	77	4	73.8	1.88	16.4	S	59.3	.48	16.0	N	S	65.0	5	65.0	4-1/4	M	98	89 O	196	S-Q	
Thatcher	10003	58.0	25.4	6	87	7	73.0	1.83	15.7	Q	56.3	.48	14.9	N	Q-S	63.5	5	63.5	5	S-M	99	91 O	202	Q	
Waldron	13958	59.5	30.6	30	67	3	74.4	1.96	17.2	S	57.2	.48	16.3	N	S-Q	65.7	6	65.7	5-1/4	S	96	90 S10	229	S	
RL 4220		61.0	28.9	12	83	5	73.4	1.71	15.8	S-Q	59.9	.46	15.1	N	S	65.7	5	65.7	4-1/4	S-M	98	89 O	203	S	3
II-62-2		61.5	30.1	21	76	3	73.9	1.72	15.4	Q	60.0	.44	14.9	N	S	65.3	5	65.3	5-3/4	S	96	85 O	204	S	3
II-62-61		61.5	26.2	7	87	6	73.1	1.75	15.0	Q	59.8	.45	13.9	N	S	63.8	6	63.8	6-1/2	M-S	99	92	191	S	2
MT 677		57.0	21.9	1	86	13	72.4	1.84	14.5	Q	56.5	.50	13.9	N-S	Q	63.8	5	63.8	5-1/2	S-M	99	93	194	Q	1
MT 6723		59.0	24.0	1	91	8	72.7	1.79	14.9	Q	55.9	.47	13.9	N-S	Q	63.8	5	63.8	4-1/2	S-M	99	89 O	222	Q	1
ND 492		59.5	28.2	18	75	7	73.6	1.87	15.7	S-Q	54.7	.51	15.0	N-S	Q	65.0	6	65.0	5-3/4	S	100 W	90 S10	242	S	2
ND 493		61.0	31.7	29	68	3	74.3	1.86	16.3	S	59.3	.36	15.4	N-S	VS	66.3	8	66.3	10	S-M	100	89	181	Q-S	3
ND 494		61.0	31.9	38	60	2	74.8	1.84	16.3	S	56.5	.41	15.2	N-S	S-Q	65.7	6	65.7	5-1/2	S	102 S1C	89 IO	205	S	3
ND 495		61.0	32.5	48	49	3	75.3	1.87	17.0	S	56.8	.39	16.1	N-S	S-Q	65.7	7	65.7	6-3/4	S	99	86 O	210	S	3
S 6579		60.0	31.8	26	68	6	74.0	1.67	16.0	S	57.5	.43	15.4	N-S	S-Q	64.2	7	64.2	8	S	101 S1C	85 OI	211	S	3
S 6694		61.0	31.8	26	71	3	74.2	1.69	16.2	S	57.0	.48	15.7	N	S-Q	64.4	7	64.4	7-1/4	S	100	87 OI	232	S-Q	2
Wisc. 271		60.5	28.0	8	88	4	73.2	1.72	15.6	Q	57.9	.41	15.1	N-S	Q	65.0	10	65.0	11-1/4	S	101 S1C	89 O	209	Q	1
Wisc. 678-1-6-9		59.5	29.7	20	77	3	73.9	1.79	15.9	S-Q	56.1	.44	15.3	N-S	Q	66.3	9	65.3	12-3/4	S	100	94	207	Q	1

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 25

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Watertown, South Dakota

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	61.0	28.7	42	52	6	74.8	1.69	15.8	S	55.1	.46	15.0	N	S	64.2	4	64.2	3	S	98 DC	80 O	213	S	
Justin	13462	59.0	30.7	32	60	8	74.2	1.82	16.2	S	56.8	.46	14.7	N	S	64.4	7	64.4	5-1/4	S	99	89 O	212	S	
Marquis	3461	59.5	25.1	7	80	13	72.7	2.16	13.5	S-Q	54.5	.50	12.7	N	S-Q	61.0	4	61.0	3-1/2	M	102 S1C	88 O	187	S-Q	
Neepawa		61.0	31.7	41	55	4	74.9	1.80	15.8	S	53.5	.50	15.0	N	Q	63.8	3	63.8	2-1/2	M-S	104 BC	75 OI	196	Q-S	
Polk	13773	61.0	36.4	48	44	8	75.0	1.72	14.3	Q	57.7	.44	13.9	N	S	62.8	7	62.8	5-3/4	S-M	100	86 O	215	S-Q	
Red River 68	14193	61.0	28.6	4	86	10	72.7	1.88	15.4	S-Q	57.0	.50	14.6	N	S-Q	66.6	10	66.6	10-3/4	B	98	86 IO	193	U	
Selkirk	13100	56.5	27.9	17	72	11	73.3	1.95	15.5	S	59.2	.49	14.8	N	S	63.8	4	63.8	3-1/2	M-W	100 C	93	177	Q	
Thatcher	10003	58.0	27.0	7	81	12	72.8	1.78	14.7	S-Q	57.3	.50	13.7	N	S	62.3	4	62.3	3-1/2	M	101	90	186	S-Q	
Waldron	13958	57.0	32.8	44	49	7	74.9	1.85	16.0	S	54.4	.55	14.9	N	Q	64.7	5	63.7	4-1/4	M-S	90 DG	80 OI	224	S	
RL 4220		61.0	30.0	33	61	6	74.4	1.73	14.1	Q	56.8	.48	13.2	N	S	63.5	3	63.5	3-1/2	S-M	103	81 IO	195	S-Q	2
II-62-2		57.0	30.6	37	55	8	74.5	1.88	15.6	S	57.7	.52	13.7	N	Q	62.8	7	61.8	7-1/4	M-S	85 DC	83 T	202	Q	2
II-62-61		59.5	27.5	26	65	9	73.9	1.76	14.4	Q	58.1	.50	12.8	N	S	60.0	8	60.0	6-1/4	M	90 DC	81 O	200	Q-U	1
MT 677		53.0	18.6	1	75	24	71.9	1.90	14.0	U	53.8	.53	12.7	N	U	61.3	6	61.3	5	M-S	100 VC	75 IO	210	Q	1
MT 6723		53.0	19.3	0	81	19	72.1	1.96	14.5	Q	53.7	.53	13.8	N	U	61.6	5	61.6	4-3/4	M-S	95	85 I	212	Q	1
ND 492		58.5	29.7	33	59	8	74.3	1.79	15.1	S	53.1	.49	13.8	N	Q	63.8	5	63.8	4-1/4	M-S	98	75 O	230	Q	1
ND 493		57.5	31.6	28	67	5	74.2	1.77	15.2	S	59.2	.41	13.8	N	VS	63.5	6	63.5	5-1/2	M-S	100	90 S1O	182	S	3
ND 494		58.0	32.6	44	51	5	75.0	1.85	15.0	S-Q	56.3	.43	14.1	N	S	64.4	5	64.4	3-1/2	M-S	100 C	91 S1O	198	S	3
ND 495		56.0	31.4	43	54	3	75.0	1.92	16.9	S-Q	51.3	.47	14.9	N	Q	63.8	10	63.8	9	S	95 DC	70 OI	197	S-Q	2
S 6579		57.0	30.6	24	64	12	73.6	1.69	14.9	Q	55.6	.49	14.3	N	S	63.2	5	63.2	4-1/2	M-S	96 DC	86 O	205	S-Q	2
S 6694		60.0	34.4	42	50	8	74.7	1.71	14.2	Q-S	55.1	.52	13.7	N	S-Q	63.5	5	63.5	4-1/4	M-S	99	80 IO	200	S	3
Wisc. 271		60.0	31.6	11	79	10	73.1	1.71	14.6	Q-S	57.9	.42	13.8	N	S	62.8	8	62.8	7-1/2	M-S	100	92	193	S-Q	3
Wisc. 678-1-6-9		59.0	33.4	37	58	5	74.6	1.74	13.9	Q	56.1	.44	13.0	N	S	62.8	8	62.8	8-1/4	S-M	99	87 I	213	Q	2

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 26

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Lind, Washington

1969 CROP

Variety or Sel. No	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	62.5	28.8	20	79	1	74.0	1.59	15.5	S	53.3	.46	15.2	N	S	67.0	4	67.0	2-3/4	S	102 BC	95	196	S	
Justin	13462	62.0	32.9	51	48	1	75.5	1.57	15.5	S	53.5	.43	15.4	N	S	68.2	6	68.2	4	S-M	104 BC	94	186	S	
Marquis	3461	62.0	29.6	26	72	2	74.2	1.52	15.2	S	51.6	.45	14.7	N	Q	63.5	5	63.5	3-1/4	S-M	98 DC	92	195	S-Q	
Neepawa		61.5	32.1	20	78	2	73.9	1.51	15.7	S	52.8	.45	15.4	N	S-Q	64.2	3	64.2	2-1/4	S-M	103 BC	85 OI	183	S	
Polk	13773	63.5	38.9	54	45	1	75.7	1.65	15.7	S	53.7	.46	15.2	N	S	66.6	6	66.6	4-1/4	S	100	90 O	209	S	
Red River 68	14193	64.0	36.4	17	82	1	73.8	1.65	15.9	S	54.7	.48	15.6	N	S	69.7	10	69.7	10	B	95	85 OI	212	U	
Selkirk	13100	60.0	34.8	25	74	1	74.2	1.57	14.1	S	55.1	.46	14.0	N	S	64.2	4	64.2	3	M	100 C	95	180	S	
Thatcher	10003	62.0	31.3	16	82	2	73.7	1.52	15.2	S	53.2	.58	15.1	N	Q	63.8	3	63.8	2-1/2	M-S	102 BC	91 S1O	195	S	
Waldron	13958	62.0	35.8	52	47	1	75.6	1.55	15.2	S	53.3	.47	14.8	N	S	65.0	5	65.0	4	S-M	102 BC	80 OI	206	S-Q	
RL 4220		63.0	33.9	36	63	1	74.8	1.51	13.6	S-Q	53.7	.45	13.3	N	S	64.2	4	64.2	3	M	100	90 O	180	S	3
II-62-2		63.0	40.2	64	36	0	76.2	1.48	15.2	S	54.9	.44	14.6	N	S	66.0	4	66.0	3-1/4	S-M	101 C	88 I	196	S	3
II-62-61		63.0	30.0	38	62	0	74.9	1.44	13.9	S	56.7	.44	13.3	N	S	63.5	5	63.5	4-1/4	S-M	100 C	90	188	S	3
MT 677		62.0	28.5	11	88	1	73.5	1.50	14.7	S-Q	52.5	.44	14.0	N-S	Q	64.2	4	64.2	3	S-M	99	80 OI	190	Q-S	2
MT 6723		62.5	28.2	12	88	0	73.6	1.49	15.3	S	52.8	.42	14.3	N-S	Q	64.7	4	64.7	3	S	105 BC	82 IO	212	S-Q	2
ND 492		63.0	31.1	53	46	1	75.6	1.64	16.1	S	51.4	.45	15.1	N	Q	66.3	5	66.3	3-1/2	M-S	100 W	86 I	225	S	3
ND 493		63.5	36.9	68	32	0	76.4	1.58	15.4	S	54.7	.37	15.1	N-S	S-Q	66.0	4	66.0	2-1/2	M	100	89 O	185	S-Q	3
ND 494		62.0	39.1	74	26	0	76.7	1.63	15.6	S	53.7	.39	14.6	N-S	Q	66.0	4	66.0	2-3/4	S-M	100	83 O	190	S-Q	3
ND 495		63.0	34.2	57	41	2	75.8	1.66	16.0	S	52.8	.38	15.4	N-S	S-Q	65.7	4	65.7	3	S-M	100 C	81 OI	193	S-Q	3
S 6579		61.5	37.7	62	37	1	76.1	1.53	14.6	S	57.1	.44	14.5	N	S	65.7	4	65.7	2-3/4	M	103 BC	81 OI	180	Q	2
S 6694		61.5	36.0	53	46	1	75.6	1.66	15.5	S	52.3	.49	15.1	N	Q	67.3	5	67.3	3-3/4	S	100	85 OI	201	S-Q	3
Wisc. 271		62.0	29.9	13	85	2	73.6	1.59	15.1	S	54.7	.44	14.6	N	S	66.3	7	66.3	6-1/4	M-S	99	90	185	S	3
Wisc. 678-1-6-9		63.0	32.2	40	60	0	75.0	1.58	15.1	S	55.8	.40	14.7	N	S	67.9	6	66.9	5-1/4	S	100 C	86 O	199	S-Q	3

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 27

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Madison, Wisconsin

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	63.0	28.5	33	66	1	74.6	1.88	15.5	S	57.7	.47	14.9	N-S	S	66.3	5	66.3	3-3/4	S	98	85 O	209	S	
Justin	13462	61.0	31.2	43	56	1	75.1	1.95	16.1	S	55.6	.44	15.5	N-S	S	67.9	6	67.9	5-1/2	S	97	83 O	200	S	
Marquis	3461	60.5	26.1	8	88	4	73.2	1.90	13.5	Q-S	55.4	.50	12.5	N-S	S-Q	61.3	4	61.3	4	M	99	90 O	186	S-Q	
Neepawa		61.0	28.5	22	77	1	74.1	1.91	15.9	S	57.4	.50	15.1	N-S	S-Q	65.0	4	65.0	3	S	100	87 O S1I	205	S	
Polk	13773	62.5	37.2	59	40	1	75.9	1.86	15.8	S	56.5	.43	15.0	N	S	67.0	6	67.0	5	S	100	93	212	S	
Red River 68	14193	60.5	29.6	7	88	5	73.1	1.93	15.5	S	56.7	.51	14.9	N-S	Q	67.9	9	67.9	9-1/2	B	97	88 O	205	U	
Selkirk	13100	59.0	29.8	31	67	2	74.5	2.00	14.6	S	58.2	.47	13.8	N-S	S	61.6	3	61.6	2-3/4	M	99	90 O	183	S-Q	
Thatcher	10003	60.0	25.6	9	88	3	73.3	1.90	14.3	S	57.2	.51	13.3	N-S	Q	61.3	5	61.3	4-1/4	M-S	99	90 O	204	S-Q	
Waldron	13958	59.5	31.2	43	56	1	75.1	1.97	16.0	S	57.5	.44	14.9	N-S	S-Q	64.2	4	64.2	4	S	97	85 O	218	S	
RL 4220		61.0	34.8	31	67	2	74.5	1.92	14.0	S	58.6	.49	13.4	N-S	S	62.5	3	62.5	3-1/2	S-M	100	80 O	195	S	3
II-62-2		60.5	30.8	38	61	1	74.9	1.76	13.4	Q	56.1	.47	12.1	S-N	Q	61.6	4	61.6	4	M-S	100	98 S1O	179	Q	2
II-62-61		60.0	38.0	20	75	5	73.8	1.83	13.8	Q	59.3	.47	12.6	N-S	Q-S	61.3	4	61.3	4-1/4	S-M	98	93	189	Q	2
MT 677		55.0	20.2	0	83	17	72.2	2.01	15.0	S	53.1	.52	13.8	S-N	Q	61.9	5	61.9	4-3/4	S-M	98	83 OI	217	S-Q	2
MT 6723		56.0	22.0	2	88	10	72.6	2.04	14.7	Q-U	55.4	.52	13.7	S-N	U	62.8	4	62.8	3-1/2	S-M	98	83 OI	215	S	1
ND 492		60.5	32.2	49	49	2	75.4	1.98	15.8	S	53.1	.52	14.3	N-S	Q	67.3	6	67.3	4	S	100 W	90 I	225	S	2
ND 493		57.5	30.3	24	73	3	74.1	1.93	15.9	Q	59.2	.39	14.5	N-S	S-Q	64.2	5	64.2	4-3/4	S-M	101 C	90 C	184	S	2
ND 494		56.0	26.0	21	74	5	73.8	2.11	15.7	Q	53.7	.50	14.6	S-N	Q	66.3	5	66.3	4-1/2	S	99	90	202	S	2
ND 495		57.0	30.3	27	69	4	74.2	2.05	17.1	Q	55.1	.46	15.8	N-S	Q	67.3	6	67.3	5	S	99	87 O	211	S	2
S 6579		60.0	37.3	54	44	2	75.6	1.74	15.0	S	56.1	.46	14.7	N-S	S	62.8	5	62.8	4-1/4	S-M	100	91 I	206	S	3
S 6694		61.5	33.6	49	50	1	75.4	1.88	14.7	S	57.1	.51	13.9	N-S	Q	62.3	6	62.3	4-1/4	S	101	86 O	210	S	3
Wisc. 271		57.0	29.9	23	73	4	74.0	1.91	14.7	Q-S	57.5	.45	13.7	N-S	S-Q	63.2	7	63.2	6-1/2	S	101 C	87 OI	210	Q	2
Wisc. 678-1-6-9		57.0	27.7	16	79	5	73.6	1.89	15.1	Q	54.9	.45	14.0	S-N	Q	64.2	7	64.2	7-3/4	S-M	100 C	87 IO	202	U	1

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 28

QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

Sheridan, Wyoming

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval. 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	61.5	31.6	31	67	2	74.5	1.60	15.8	S	57.6	.46	15.4	N	S	62.5	2	62.5	1-3/4	S-M	100 S1C	90 OI	198	S	
Justin	13462	60.5	32.3	53	44	3	75.5	1.84	16.8	S	58.6	.42	16.0	N	S	67.0	4	67.0	3	S	101 S1C	85 O	202	S	
Marquis	3461	63.0	33.9	28	69	3	74.3	1.50	14.9	S	57.9	.41	14.2	N	S	60.3	1	60.3	1-1/2	M-W	100 S1C	92 S1O	187	Q	
Neepawa		62.0	31.9	38	59	3	74.8	1.55	16.3	S	55.1	.41	15.6	N	Q	61.3	2	61.3	1-1/2	M-W	101	92	175	U	
Polk	13773	62.5	39.1	57	41	2	75.8	1.63	16.0	S	57.7	.44	15.5	N	S	64.2	3	64.2	2-3/4	S-M	100	90 O	226	S	
Red River 68	14193	64.0	37.3	47	52	1	75.3	1.63	16.0	S	57.1	.48	15.9	N	S	69.1	6	69.1	4	VS	101 C	90 O	189	Q	
Selkirk	13100	60.0	34.5	53	43	4	75.5	1.65	15.6	S	59.3	.49	15.2	N	S-Q	62.8	2	62.8	2-1/4	M-S	100	87 O	193	S	
Thatcher	10003	61.0	30.6	33	64	3	74.5	1.53	16.2	S	57.7	.44	15.6	N	S	62.5	2	62.5	2	M	102 S1C	87 O	190	S	
Waldron	13958	60.5	37.0	76	21	3	76.7	1.74	17.1	S	54.2	.43	16.7	N	Q-S	64.2	2	64.2	2	M-S	98	88 O	214	S	
RL 4220		62.0	33.2	35	62	3	74.6	1.44	15.0	S	56.5	.43	14.1	N	S-Q	61.9	2	61.9	2	M-W	99	91 S1I	180	Q	2
II-62-2		62.0	39.1	68	29	3	76.3	1.55	15.7	S	55.3	.46	14.7	N	S	61.6	2	61.6	1-3/4	M	100 S1C	91 S1O	191	Q	2
II-62-61		63.5	34.7	41	57	2	75.0	1.40	13.7	Q	60.0	.38	12.9	N	VS	61.9	3	61.9	3	M-W	100 C	93 S1I	175	Q-U	1
MT 677		62.0	32.1	34	64	2	74.6	1.45	13.7	Q	54.2	.40	12.3	N-S	Q	61.3	2	61.3	2-1/4	M-S	102 S1C	93	167	U	1
MT 6723		61.5	32.7	23	74	3	74.0	1.46	14.4	Q	55.2	.40	13.8	N-S	Q	61.9	2	61.9	2-1/4	S-M	101	89 O	190	Q	1
ND 492		61.5	38.2	58	39	3	75.8	1.64	16.4	S	53.8	.45	15.1	N	Q	64.4	3	64.4	2-1/4	M-S	101 W	92 S1OI	201	S	3
ND 493		61.0	38.8	59	39	2	75.9	1.84	16.7	S	55.6	.40	16.0	S-N	Q	63.5	2	63.5	2	S	101 S1C	80 OI	168	Q	1
ND 494		60.5	41.7	72	25	3	76.6	1.76	16.7	S	54.9	.40	16.1	N-S	S	63.5	2	63.5	2	S	102 S1C	85 OI	177	Q	2
ND 495		61.5	37.9	70	29	1	76.5	1.77	17.8	N	52.6	.43	16.8	S-N	Q-U	63.5	2	63.5	2-1/4	S	103 S1C	80 O	192	S	2
S 6579		61.5	38.8	57	40	3	75.7	1.43	15.3	S	58.4	.39	15.1	N	S	63.2	5	63.2	4	S-M	103 S1C	95	190	S	3
S 6694		61.5	38.6	57	41	2	75.8	1.53	15.3	S	56.3	.47	15.1	N	S	62.8	4	62.8	3-1/2	S	100 W	80 O	203	S	3
Wisc. 271		63.0	34.5	34	64	2	74.6	1.51	14.7	S	56.7	.40	14.3	N	S	62.3	3	62.3	3-1/4	S-M	102 C	92 S1I	177	Q	3
Wisc. 678-1-6-9		61.5	35.2	50	49	1	75.5	1.58	15.7	S	55.1	.39	15.3	N-S	S	65.7	4	65.7	3	S	104 S1C	92 S1O	197	S	3

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 29

AVERAGE OF QUALITY DATA ON UNIFORM REGIONAL NURSERY SAMPLES

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13751	62.4	30.3	33	65	2	74.5	1.68	15.3	S	55.8	.45	14.8	N	S	64.7	3	64.7	2-3/4	S	100	90 OSlI	1030	S	
Justin	13462	60.9	32.0	43	54	3	75.0	1.79	15.6	S	55.4	.44	15.0	N	S	66.3	5	66.3	4	VS	99	89 S1OI	1050	S	
Marquis	3461	61.3	29.2	25	71	4	74.1	1.77	13.8	Q-S	54.3	.48	13.6	N-S	S-Q	63.2	5	63.2	3	S	101 S1C	93	980	Q-S	
Neepawa		61.8	32.0	38	60	2	74.8	1.70	15.4	S	53.9	.46	14.6	N-S	Q	64.4	3	64.4	2-1/4	S	102 C	84 OI	1020	Q-S	
Polk	13773	63.0	36.7	54	43	3	75.6	1.69	14.6	S-Q	55.7	.45	14.0	N	S	64.4	5	64.4	3-3/4	S	99	90 S1O	1145	S	
Red River 68	14193	62.7	32.8	21	75	4	73.9	1.72	14.6	S-Q	55.2	.49	14.0	N-S	S-Q	66.6	7	66.6	6	B	99 S1C	90 I	990	U	
Selkirk	13100	59.8	33.1	39	57	4	74.8	1.79	14.5	S-Q	56.9	.48	14.0	N	S	64.2	4	64.2	3-1/4	S-M	100	90 S1H	980	S-Q	
Thatcher	10003	61.0	28.6	18	78	4	73.7	1.70	14.3	S-Q	55.4	.49	13.6	N	S-Q	63.5	4	63.5	3	S-M	101 S1C	92 S1OI	1005	S-Q	
Waldron	13958	60.5	35.4	58	39	3	75.8	1.81	15.8	S	53.8	.46	14.8	N	S-Q	65.7	4	65.7	3	S	98	86 IO	1145	S	
RL 4220		61.9	33.4	41	56	3	74.9	1.64	13.9	Q-S	56.0	.46	13.1	N-S	S	64.2	4	64.2	3	S	101	95	965	S-Q	2
II-62-2		61.7	36.0	54	43	3	75.6	1.65	14.4	S-Q	56.0	.45	13.3	N-S	S	64.2	4	64.2	3-1/2	S	101 C	90 S1IO	965	S-Q	3
II-62-61		62.7	32.0	38	58	4	74.7	1.60	13.0	Q-U	57.5	.45	12.0	N	S	62.5	4	62.5	3-3/4	S	101	88 S1IO	975	Q	1
MT 677		59.5	25.4	13	79	8	73.3	1.73	13.5	Q	53.3	.48	12.5	S-N	Q-U	62.3	4	62.3	3-1/2	S	104 S1C	86 S1IO	1005	Q	1
MT 6723		59.4	26.5	14	79	7	73.4	1.74	13.7	Q	53.7	.47	12.8	S-N	Q-U	63.8	4	63.8	3-1/4	S	101	95	1020	S-Q	1
ND 492		61.7	33.9	51	46	3	75.4	1.77	15.0	S	52.4	.47	13.8	N-S	U-Q	66.0	5	66.0	3-1/4	S-M	104 W	94	1190	S	2
ND 493		60.7	34.7	49	49	2	75.4	1.76	14.8	S-Q	57.6	.37	13.8	N-S	VS	65.3	5	65.3	4-1/4	S	105 CB	98 S1I	925	Q-S	2
ND 494		60.6	35.1	55	42	3	75.6	1.80	14.6	S-Q	54.7	.42	13.7	S-N	Q	66.0	4	66.0	3-1/2	S	106	91	985	S	2
ND 495		60.4	35.1	54	43	3	75.6	1.84	15.7	S	53.9	.42	14.7	N-S	Q	67.0	6	67.0	4-1/4	VS	102	88 S1I	1010	S	3
S 6579		61.3	35.1	54	43	3	75.6	1.62	14.8	S-Q	55.6	.44	14.1	N-S	S	66.3	5	66.3	4-1/2	VS	103 S1C	92	1005	S	3
S 6694		61.9	35.7	49	58	3	75.3	1.70	14.1	Q-S	55.2	.50	13.7	N	Q	66.3	6	66.3	4-1/4	S	102	92	1020	S	2
Wisc. 271		61.6	32.2	30	66	4	74.3	1.66	14.2	Q-S	56.4	.43	13.5	N-S	S	65.0	6	65.0	5	VS	97	92	1015	S	3
Wisc. 678-1-6-9		60.9	33.8	44	53	3	75.1	1.71	14.4	S-Q	54.9	.42	13.7	N-S	S-Q	66.6	6	66.6	5	VS	101 S1C	95	1040	S	2

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 30

QUALITY DATA ON UNIFORM REGIONAL NURSERY STATE AVERAGES

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mix. Abs. 2/	Mix. Pat. 3/	Bake Abs. 2/	Mix. Time	Dough Char. 4/	Crumb Color 5/	Crumb Grain 6/	Loaf Vol.
		#/Bu.	g.	%	%	%	%	%	%	%	%	%	%		%	min.				cc.
IDAHO STATION																				
Chris	13751	61.5	32.7	57	42	1	75.8	1.50	15.6	58.5	.44	15.4	65.0	2	65.0	1-3/4	M	103	83 O	220
Justin	13462	62.0	37.0	71	28	1	76.5	1.56	15.1	59.5	.43	14.3	64.7	3	64.7	2-1/4	M	102 S1C	92	206
MINNESOTA STATIONS																				
Chris	13751	62.8	31.4	41	56	3	74.9	1.77	14.3	54.8	.47	13.6	63.5	3	63.5	2-3/4	S-M	100	90 O	197
Justin	13462	61.3	33.6	50	47	3	75.4	1.85	14.5	55.8	.47	13.8	63.0	5	63.0	3-3/4	S	100	88 O	194
MONTANA STATIONS																				
Chris	13751	62.5	32.0	33	64	3	74.5	1.58	15.2	55.5	.43	14.7	63.8	3	63.8	2-1/4	M-S	100 S1C	92 S1I	185
Justin	13462	60.0	32.3	44	52	4	75.0	1.73	16.0	54.9	.42	15.3	67.2	4	67.2	3-1/2	S	100 C	89 OI	194
NORTH DAKOTA STATIONS																				
Chris	13751	62.8	30.2	33	64	3	74.5	1.66	15.4	55.8	.44	14.9	63.5	3	63.5	2-3/4	S-M	102 S1C	88 OI	200
Justin	13462	61.5	31.9	43	55	2	75.1	1.79	15.2	54.3	.44	14.7	64.8	6	64.8	4-1/2	S	100 S1C	86 O	195
SOUTH DAKOTA STATIONS																				
Chris	13751	61.0	28.0	24	71	5	74.0	1.74	16.5	57.6	.44	15.7	66.5	5	66.5	3-3/4	S	99 C	83 OI	217
Justin	13462	59.0	29.5	22	72	6	73.8	1.87	16.6	58.1	.45	15.8	66.8	7	66.8	7	S	99 C	87 O	211
WASHINGTON STATION																				
Chris	13751	62.5	28.8	20	79	1	74.0	1.59	15.5	53.3	.46	15.2	67.0	4	67.0	2-3/4	S	102 BC	95	196
Justin	13462	62.0	32.9	51	48	1	75.5	1.57	15.5	53.5	.43	15.4	68.2	6	68.2	4	S-M	104 BC	94	186
WISCONSIN STATION																				
Chris	13751	63.0	28.5	33	66	1	74.6	1.88	15.5	57.7	.47	14.9	66.3	5	66.3	3-3/4	S	98	85 O	209
Justin	13462	61.0	31.2	43	56	1	75.1	1.95	16.1	55.6	.44	15.5	67.9	6	67.9	5-1/2	S	97	83 O	200
WYOMING STATION																				
Chris	13751	61.5	31.6	31	67	2	74.5	1.60	15.8	57.6	.46	15.4	62.5	2	62.5	1-3/4	S-M	100 S1C	90 OI	198
Justin	13462	60.5	32.3	53	44	3	75.5	1.84	16.8	58.6	.42	16.0	67.0	4	67.0	3	S	101 S1C	85 O	202
STATE AVERAGES OF THE TWO VARIETIES																				
Idaho		61.8	34.9	64	35	1	76.2	1.53	15.4	59.0	.44	14.8	64.9	3	64.9	2	M	103 S1C	88 O	213
Minnesota		62.1	32.5	46	51	3	75.2	1.81	14.4	55.3	.47	13.7	63.3	4	63.3	3-1/4	S-M	100	89 O	196
Montana		61.3	32.2	39	58	3	74.8	1.66	15.6	55.2	.43	15.0	65.5	4	65.5	3-1/4	M-S	100 S1C	91 S1OI	190
North Dakota		62.2	31.1	38	59	3	74.8	1.73	15.3	55.1	.44	14.8	64.2	5	64.2	3-3/4	S-M	101 S1C	87 OI	198
South Dakota		60.0	28.8	23	72	5	73.9	1.81	16.6	57.9	.45	15.8	66.7	6	66.7	5-1/2	S	99 C	85 OI	214
Washington		62.3	30.9	36	63	1	74.8	1.58	15.5	53.4	.45	15.3	67.6	5	67.6	3-1/2	S-M	103 BC	95	191
Wisconsin		62.0	29.9	38	61	1	74.9	1.92	15.8	56.7	.46	15.2	67.1	6	67.1	4-3/4	S	98	84 O	205
Wyoming		61.0	32.0	42	55	3	75.0	1.72	16.3	58.1	.44	15.7	64.8	3	64.8	2-1/2	S-M	101 S1C	88 OI	200
1968 Averages 7/		59.0	27.4	12	83	5	73.4	1.66	16.1	57.4	.47	15.6	66.5	6	66.5	4-3/4	S	98 S1C	94 S1O	182
1969 Averages 7/		61.4	31.2	37	60	3	74.7	1.75	15.5	55.9	.45	14.8	64.9	5	64.9	4	S-M	100 S1C	88 OI	200

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ Refer to Reference Mixograms for numerical curve pattern.
4/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
5/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
6/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
7/ Averages obtained by using data for Minnesota, Montana, North Dakota, and South Dakota.

TABLE 31

QUALITY DATA ON SAWFLY YIELD NURSERY SAMPLES

Dutton, Montana

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chinook	13220	63.5	33.4	53	45	2	75.6	1.60	12.6	S	55.6	.45	12.2	N	S	60.7	3	60.7	2-1/2	M-S	106 S1C	92	175	S	
Fortuna	13596	63.0	40.7	58	40	2	75.8	1.59	11.7	S	56.7	.45	11.1	N	S	59.0	3	59.0	2-1/2	M	106 VBC	96	175	S	
Rescue	12435	63.0	35.3	34	62	4	74.5	1.59	11.2	S	55.1	.47	10.7	N-S	S	57.5	2	57.5	2-1/2	M	104 BC	96	172	S	
Thatcher	10003	63.0	31.2	29	68	3	74.3	1.54	11.3	S	54.0	.48	9.9	N	S-Q	57.0	3	57.5	3-1/2	MS1D	102 BC	90 C	155	Q-S	
CN 164134		63.0	30.3	18	78	4	73.7	1.60	10.1	Q	56.7	.43	9.5	N-S	S	55.7	3	55.7	3	M-W	104 BC	91 C	153	Q	2
CN 530411		63.5	35.8	65	34	1	76.2	1.61	10.7	S-Q	54.4	.46	9.9	N	S	56.7	3	57.0	3	D	103 BC	89 C	155	U	1
CN 754051		62.5	35.1	44	53	3	75.1	1.59	11.2	S	53.5	.44	10.7	N-S	S	58.7	4	58.7	3	M-W	103 BC	90	162	S	3
MT 6812		63.5	31.6	35	62	3	74.6	1.59	9.7	Q	54.4	.45	8.4	N-S	Q	55.1	2	55.6	2-1/4	M-WS1D	102 VCB	88 T	146	U	1
MT 6819		64.0	31.5	24	71	5	74.0	1.60	9.5	Q	54.8	.46	8.7	N	S	55.4	5	55.9	4	MS1D	102 VCB	90 C	141	U	1
MT 6823		64.5	32.4	33	62	5	74.4	1.54	10.0	Q	54.2	.47	9.0	N-S	S	56.7	5	57.2	4	MS1D	105 BC	92 C	150	Q	2
MT 6825		62.5	29.2	30	66	4	74.3	1.65	9.6	Q	52.1	.47	8.4	N-S	Q-U	55.1	2	55.6	2-1/2	M-WS1D	106 VCB	85 CT	139	U	1
ND 6579		63.0	38.9	61	37	2	76.0	1.45	11.4	S	55.1	.42	11.1	N-S	S	59.7	6	59.7	4-1/2	MS1D	105 BC	86 I	161	S-Q	3
ND 6662		63.0	38.5	65	34	1	76.2	1.62	10.8	S-Q	55.1	.42	10.1	N-S	S	58.1	3	58.6	3	D	108 S1C	88 S1O	160	U	1
ND 6677		64.0	38.8	62	36	2	76.0	1.51	12.5	S	56.0	.42	12.0	N	S	59.7	3	60.2	3	M	110	86 OI	178	S	4
ND 6694		63.5	37.3	55	42	3	75.6	1.55	11.8	S	55.1	.47	11.3	N	S	58.3	6	58.8	4-1/4	M-W	108 S1C	93	162	S	3
ND 6745		63.0	28.4	60	38	2	75.9	1.64	10.9	S-Q	56.3	.43	10.4	N-S	S	58.7	5	59.2	3-1/2	M-W	102	97	162	S	3
ND 66124		64.0	42.2	68	32	0	76.4	1.50	11.5	S	55.5	.41	10.9	N	S	60.3	4	60.3	3-1/2	M	102 S1I	92 S1I	167	S	4

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 32

QUALITY DATA ON SAWFLY YIELD NURSERY SAMPLES

Sidney, Montana

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval. 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chinook	13220	59.0	29.9	10	80	10	73.0	1.74	13.3	S	55.9	.48	12.8	N-S	S	62.5	3	62.5	2-3/4	M	100 S1C	91 O	188	S	
Fortuna	13596	53.5	26.2	2	82	16	72.3	1.93	13.9	Q-S	54.3	.55	13.4	N-S	S-Q	63.5	3	63.5	2-1/2	M-S	100 C	89 O	203	S	
Rescue	12435	60.0	26.2	5	85	10	72.8	1.83	12.7	S	55.9	.47	11.7	N-S	S	59.7	2	59.7	2-1/2	M-S	101 S1C	91 T	192	S-Q	
Thatcher	10003	60.0	27.4	10	83	7	73.2	1.77	13.6	S	55.5	.51	13.0	N	S	62.5	4	62.5	3	M-S	102 S1C	94	205	S	
CN 164134		62.0	27.9	7	82	11	72.8	1.67	13.5	S	58.8	.41	12.8	N	VS	61.3	3	61.3	3	S	100	92	186	S-Q	3
CN 530411		61.0	32.2	29	64	7	74.1	1.68	13.8	S	56.6	.46	12.8	N	S	61.3	3	61.3	3	M-S	102 S1C	94	197	S	3
CN 754051		59.0	29.5	13	77	10	73.2	1.80	13.3	S	53.6	.48	12.1	N-S	S-Q	63.2	4	63.2	3-1/2	S	102 S1C	93	201	S	3
MT 6812		55.5	23.0	2	80	18	72.2	1.85	12.8	Q	55.5	.54	12.0	N-S	S-Q	61.9	3	61.9	2-1/2	M	101 C	89 I	187	Q	2
MT 6819		60.0	26.0	3	86	11	72.6	1.77	13.2	S	58.3	.47	12.4	N	S	65.0	5	65.0	5-3/4	S-M	104 C	90 O	182	S	3
MT 6823		60.5	28.6	5	83	12	72.7	1.68	13.1	S	55.9	.48	12.2	N	S	63.5	4	63.5	4-1/2	S-M	103 S1C	92	195	S	4
MT 6825		55.0	24.0	3	80	17	72.3	1.94	13.1	S	54.1	.55	12.0	N-S	S-Q	61.9	3	61.9	2-3/4	M	101 VC	87 T	190	S-Q	2
ND 6579		59.5	33.6	23	70	7	73.8	1.67	13.9	S	55.7	.47	13.0	N-S	S	63.8	5	63.8	4	S-M	101 S1C	93 C	198	S	4
ND 6662		59.5	33.9	31	64	5	74.3	1.88	13.5	S	55.7	.46	12.8	N-S	S	63.5	4	63.5	3	M-S	102	93	208	S	3
ND 6677		61.5	34.2	31	62	7	74.2	1.67	13.8	S	57.6	.46	13.1	N	S	64.2	4	64.2	3	M-S	102	90 I	210	S	4
ND 6694		59.0	30.7	15	77	8	73.4	1.85	13.4	S	55.5	.55	12.5	N	S-Q	63.5	5	63.5	3-3/4	M-S	100	86 OI	207	S	3
ND 6745		58.5	30.3	13	77	10	73.2	1.95	13.7	S	55.7	.48	12.9	N-S	S	65.0	5	65.0	4-1/4	S-M	102	93	197	S	4
ND 66124		56.5	28.9	7	82	11	72.8	1.81	13.8	S	55.0	.49	13.0	N-S	S	64.2	4	64.2	3-1/2	S-M	102 S1C	93	201	S	4

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 33

QUALITY DATA ON SAWFLY YIELD NURSERY SAMPLES

Williston, North Dakota

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chinook	13220	63.5	31.6	40	58	2	74.8	1.69	14.6	S	55.7	.42	14.1	N	S	64.7	3	64.7	2-1/2	M-S	100	90 O	194	S	
Fortuna	13596	61.5	34.4	29	69	2	74.4	1.75	14.3	S	59.2	.45	13.7	N-S	S	63.5	3	63.5	3	S	102 SlC	91 SlI	212	S	
Rescue	12435	63.5	29.8	36	61	3	74.7	1.68	15.0	S	57.3	.42	14.3	N-S	S	63.2	3	63.2	2-3/4	S	98	90 O	209	S	
Thatcher	10003	62.5	28.8	28	68	4	74.2	1.69	15.4	S	57.3	.46	14.5	N-S	S	62.5	3	62.5	2	S-M	104 SlC	88 OI	203	S	
CN 164134		63.0	29.0	21	78	1	74.0	1.60	15.1	S	59.2	.39	14.6	N-S	S	63.5	3	63.5	2-3/4	M-S	103	87 O	187	S	3
CN 530411		63.0	32.1	53	46	1	75.6	1.68	14.9	S	57.1	.43	14.2	N-S	S	63.2	3	63.2	2-1/2	M-S	104 SlC	93 Sl0	207	S	4
CN 754051		62.5	30.5	42	55	3	75.0	1.65	14.9	S	54.2	.43	14.2	N-S	Q-S	64.2	4	64.2	3-1/2	S-M	103 SlC	83 OI	213	S-Q	3
MT 6812		62.5	29.6	16	81	3	73.7	1.69	14.1	S	59.0	.41	13.1	N-S	S-Q	62.5	3	62.5	2-1/2	S-M	101	91	199	S	3
MT 6819		63.0	31.6	38	62	0	74.9	1.65	14.4	S	60.7	.40	13.6	N	S	63.5	4	63.5	4-1/4	S	104 SlC	87 O	200	S	3
MT 6823		64.0	32.1	43	56	1	75.1	1.57	13.7	S-Q	59.0	.42	13.1	N-S	S	63.8	5	63.8	3-3/4	M-S	100 SlC	89 O	205	S	3
MT 6825		61.0	27.2	21	73	6	73.8	1.77	14.0	S-Q	56.4	.44	13.3	N-S	S-Q	63.8	3	63.8	3	S	99	89 O	207	S	2
ND 6579		62.5	26.5	53	44	3	75.5	1.63	15.3	S	56.5	.44	14.7	N-S	S-Q	63.5	5	63.5	3-3/4	S	105 C	80 OI	218	S-Q	2
ND 6662		62.5	34.6	49	49	2	75.4	1.68	14.8	S	57.3	.41	14.4	N-S	S	63.5	4	63.5	2-3/4	S-M	104 SlC	90 OSlI	219	S	4
ND 6694		61.5	30.5	35	62	3	74.6	1.84	14.3	S	57.1	.51	14.0	N-S	Q-S	63.5	5	63.5	4	S	96	89 Sl0	217	S	3
ND 6745		62.5	35.7	50	50	0	75.5	1.72	14.1	S	58.5	.42	13.9	N-S	S	63.2	4	63.5	3	S	99	92	210	S	4
ND 66124		62.5	32.7	40	58	2	74.9	1.67	14.2	S	57.8	.42	13.8	N	S	63.5	4	63.5	3	M-S	99	89 Sl0	211	S	4

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

TABLE 34

AVERAGE OF QUALITY DATA ON SAWFLY YIELD NURSERY SAMPLES

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval. 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chinook	13220	62.0	31.6	34	61	5	74.5	1.68	13.5	S	55.7	.45	13.0	N	S	62.6	3	62.6	2-1/2	M-S	102	S1C	91 O	186	S	
Fortuna	13596	59.3	33.8	30	64	6	74.2	1.76	13.3	S-Q	56.7	.48	12.7	N-S	S	62.0	3	62.0	2-3/4	M-S	103	C	92	S1IO 197	S	
Rescue	12435	62.2	30.4	25	69	6	74.0	1.70	13.0	S	56.1	.45	12.2	N-S	S	60.1	2	60.1	2-1/2	M-S	101	C	92	S1O 191	S	
Thatcher	10003	61.8	29.1	22	73	5	73.9	1.67	13.4	S	55.6	.48	12.5	N	S	60.7	3	60.8	2-3/4	M-S	103	C	91	S1OI 188	S-Q	
CN 164134		62.7	29.1	15	80	5	73.5	1.62	12.9	S-Q	58.2	.41	12.3	N-S	S	60.2	3	60.2	3	M-S	102	C	90	S1OC 175	Q-S	3
CN 530411		62.5	33.4	49	48	3	75.3	1.67	13.1	S	56.0	.45	12.3	N	S	60.4	3	60.5	2-3/4	M-S	S1D	103 S1C	92	S1OC 186	Q-S	3
CN 754051		61.3	31.7	33	62	5	74.4	1.68	13.1	S	53.8	.45	12.3	N-S	Q-S	62.0	4	62.0	3-1/4	S-M	103	C	89	S1OI 192	S	3
MT 6812		60.5	28.1	18	74	8	73.5	1.71	12.2	Q-S	56.3	.47	11.2	N-S	Q-S	59.8	3	60.0	2-1/2	M-W	101	C	89	S1IT 177	Q	2
MT 6819		62.3	29.7	22	73	5	73.8	1.67	12.4	S-Q	57.9	.44	11.6	N	S	61.3	5	61.5	4-1/2	S-M	103	C	89 O	174	S-Q	3
MT 6823		63.0	31.0	27	67	6	74.1	1.60	12.3	S-Q	56.4	.46	11.4	N-S	S	61.3	5	61.5	4	M-S	103	S1C	91	S1O 183	S-Q	3
MT 6825		59.5	26.8	18	73	9	73.5	1.79	12.2	Q-S	54.2	.49	11.2	N-S	Q	60.3	3	60.4	2-3/4	M	102	VC	87 CT	179	Q	1
ND 6579		61.7	33.0	46	50	4	75.1	1.58	13.5	S	55.8	.44	12.9	N-S	S-Q	62.3	5	62.3	4	M-S	104	C	86 OI	192	S-Q	3
ND 6662		61.7	35.7	48	49	3	75.3	1.73	13.0	S	56.0	.43	12.4	N-S	S	61.7	4	61.9	3	M-S	S1D	105 S1C	90	S1OI 196	S-Q	3
ND 6677		62.8	36.5	47	50	3	75.1	1.59	13.2	S	56.8	.44	12.6	N	S	62.0	4	62.2	3	M-S	106		88 OI	194	S	4
ND 6694		61.3	32.8	35	60	5	74.5	1.75	13.2	S	55.9	.51	12.6	N	S-Q	61.8	5	61.9	4	M-S	101		89	S1O 195	S	3
ND 66124		61.0	34.6	38	58	4	74.7	1.66	13.2	S	56.1	.44	12.6	N	S	62.7	4	62.7	3-1/4	M-S	101	S1CI	91	S1OI 193	S	4
ND 6745		61.3	31.5	41	55	4	74.9	1.77	12.9	S	56.8	.44	12.3	N-S	S	62.3	5	62.5	3-1/2	S-M	101		94	190	S	4

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
4/ N - Normal, H - Hard, S - Soft, V - Very.
5/ Refer to Reference Mixograms for numerical curve pattern.
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.
7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.
8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close, H - Harsh.
9/ 1 - No Promise, 2 - Little Promise, 3 - Some Promise, 4 - Good Promise.

NOTE: Sample No. ND 6677 was not included in the Williston nursery.

TABLE 35

QUALITY DATA ON SAWFLY YIELD NURSERY SAMPLES

Williston, North Dakota
(Secondary)

1969 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/	1000 Kwt.	Kernel Size Lg.	Med.	Sm.	Pot. Yld.	Wht. Min. 2/	Wht. Pro. 2/	Kern. Char. 3/	Flr. Ext.	Min.@ 65%Ex. 2/	Flr. Pro. 2/	Mlg. Char. 4/	Mlg. Per. 3/	Mix. Abs. 2/	Mix. Pat. 5/	Bake Abs. 2/	Mix. Time	Dough Char. 6/	Crumb Color 7/	Crumb Grain 8/	Loaf Vol.	Bake Eval. 3/	Gen. Eval 9/
		#/Bu.	g.	%	%	%	%	%	%		%	%	%			%		%	min.				cc.		
Chris	13220	63.5	34.4	42	56	2	75.0	1.66	15.4	S	56.9	.42	14.9	N-S	S	64.2	3	64.2	2-1/4	S	102	94	207	S	
Fortuna	13596	61.0	33.0	25	73	2	74.1	1.73	14.3	S	57.6	.46	13.8	N	S	63.5	3	63.5	2-3/4	S-M	99 C	88 O	210	S	
Waldron	13958	61.0	36.9	62	37	1	76.1	1.93	17.6	S	53.3	.48	15.8	N	S	66.3	3	66.3	2-1/4	S	90 DG	85 OI	237	S	
S 6701		61.5	40.8	58	40	2	75.8	1.74	16.0	S	55.4	.42	15.7	N-S	Q-S	63.5	2	63.5	2	S	104 CB	86 O	202	S-Q	2
S 6722		62.5	33.7	42	56	2	75.0	1.65	14.5	S	57.8	.46	13.6	N	S	62.5	3	62.5	3	S-M	102 C	90 IO	211	S-Q	3
S 6723		63.0	39.1	54	44	2	75.6	1.67	14.5	S	55.0	.46	13.6	N	Q-S	65.0	4	65.0	2-3/4	S-M	102	92	203	S	3
S 6724		62.5	34.5	19	77	4	73.8	1.71	14.3	S	56.5	.41	13.5	S-N	S	65.0	4	65.0	3-1/2	S	102 S1C	90 O	183	S-Q	3
S 6730		62.5	36.9	44	54	2	75.1	1.68	15.0	S	56.2	.43	14.3	S-N	S	62.5	3	62.5	2-3/4	M-S	103 S1C	90 OI	205	S-Q	3
S 6733		61.5	38.8	58	40	2	75.8	1.91	15.3	S	54.7	.53	14.3	N-S	Q	65.3	4	65.3	3-1/4	M-S	100	88 O	223	S	3
S 6736		63.5	38.5	49	49	2	75.4	1.71	14.6	S	57.1	.43	14.0	N-S	S	64.4	5	64.4	3-3/4	S-M	103 S1C	93	200	S	4
S 6737		63.0	35.3	44	53	3	75.1	1.63	14.7	S	58.0	.43	13.6	N	S-Q	64.2	5	64.2	4-3/4	S	101	88 OI	208	Q	2
S 6738		63.5	34.1	39	59	2	74.9	1.59	14.3	S	56.9	.42	14.0	N	S	63.5	4	63.5	3-1/4	S-M	102	93 S1I	204	S-Q	3
S 6739		64.0	35.6	38	60	2	74.8	1.67	15.4	S	57.1	.40	13.5	N-S	S-Q	63.5	4	63.5	2-3/4	S-M	105	85 IO	217	S	3
S 6741		62.5	34.0	40	58	2	74.9	1.78	14.6	S	56.2	.49	14.0	N	S-Q	63.5	5	63.5	3-1/2	M-S	102	86 IO	216	S	3
S 6753		63.0	33.2	53	45	2	75.6	1.72	15.1	S	54.8	.45	14.0	N-S	S-Q	60.3	2	60.3	2-1/4	M	105 S1C	90	197	U-Q	1
S 6754		61.0	36.0	52	46	2	75.5	1.69	15.2	S	54.3	.45	14.8	N-S	S	61.3	2	61.3	2-1/4	M-S	105	89 O	213	Q-S	2
S 6758		62.5	36.9	24	74	2	74.1	1.74	15.9	S	54.3	.44	14.8	N-S	Q-S	61.3	2	61.3	2	M-S	105	91 S1O	208	S-Q	2
S 6763		62.0	35.8	55	43	2	75.7	1.69	14.7	S	54.0	.47	13.7	N-S	Q-S	61.6	2	61.6	2-1/4	M	103	86 O	196	S-Q	2
S 6764		61.0	26.1	48	50	2	75.3	1.70	14.7	S	53.1	.47	14.0	N-S	Q	62.3	2	62.3	2	M	104	92	195	S-Q	2
S 6765		62.0	38.3	61	37	2	76.0	1.70	15.1	S	51.7	.45	14.4	S-N	Q-U	63.5	3	63.5	2	M-S	104	93	208	S	2
S 6766		60.5	38.6	54	43	3	75.6	1.76	14.4	S	53.5	.45	14.2	N-S	Q-S	64.2	3	64.2	2-3/4	M-S	104 S1C	89 O	204	S	3
S 6769		61.0	36.2	48	50	2	75.3	1.70	15.5	S	55.7	.47	14.9	N-S	S-Q	62.3	3	62.3	2-1/2	S-M	102	91	210	S-Q	2
S 6774		61.5	37.6	59	40	1	75.9	1.64	15.4	S	52.9	.45	15.1	S-N	Q	62.8	3	62.8	2-1/2	M-S	107 S1C	92 S1I	210	S-Q	2
S 6775		62.0	40.2	57	41	2	75.8	1.67	15.1	S	53.3	.45	14.4	N-S	Q-S	65.3	3	65.3	2-1/2	S	104	90 S1O	213	S	3

1/ Clean dry - subtract 1#/Bu. for dockage-free T.W.
2/ 14% Moisture Basis.
3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.
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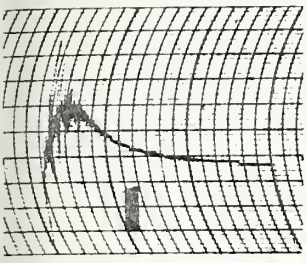
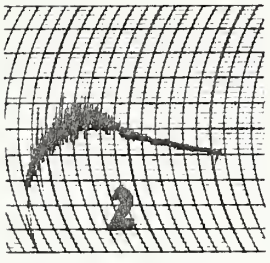
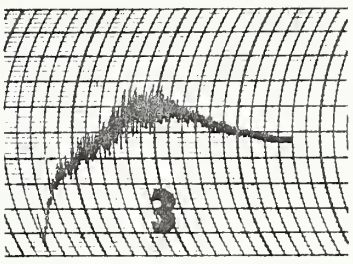
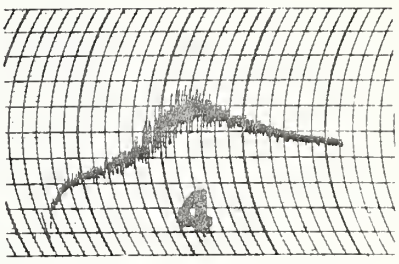
REFERENCE MIXOGRAMS

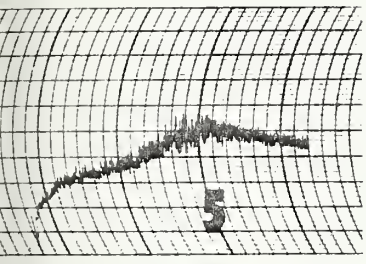
HARD RED SPRING WHEAT

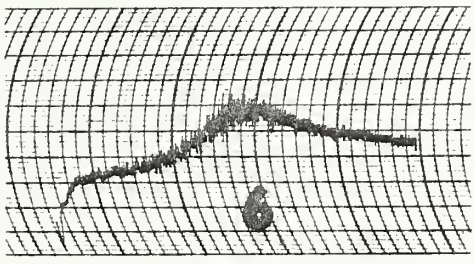


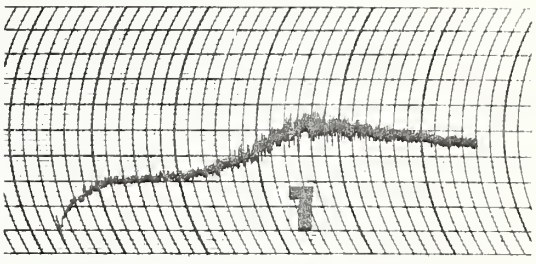


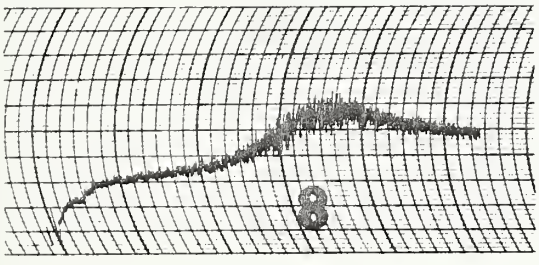


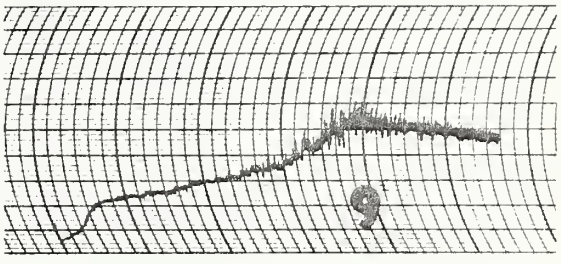


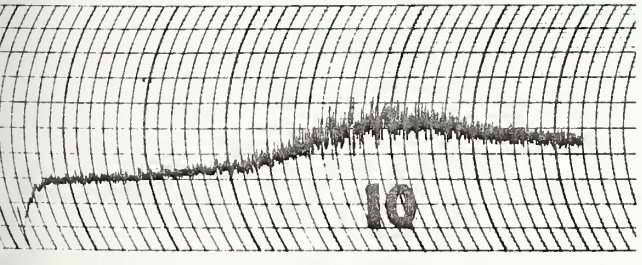


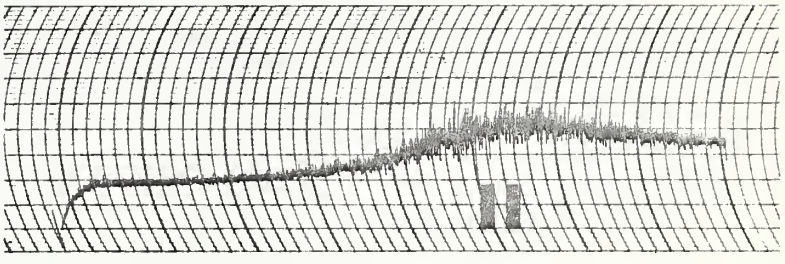












U.S.D.A. SPRING WHEAT QUALITY LABORATORY

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